Pan Pacific Guppy Association
Founded 1967

GUPPY ROUNDTABLE

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THE OFFICIAL MONTHLY PUBLICATION OF THE
PAN PACIFIC GUPPY ASSOCIATION

HALF BLACK REDS GENETICS UNCOVERED

By Jim Alderson

Most of the half black reds in this country originated from Stan Shubel's fishroom. I purchased HBR's from Stan in about 1982. They were gray bodied fish that produced 25% gold bodied HBR's. For years I line bred and inbred them trying to improve the line, with only moderate success. After years of conventional breeding practices, I felt an outcross was in order.

The first cross I set up was a grey bodied HBR male into a gold red female. The results were disappointing. Half the males were gold bodied reds and the other half were gray bodied reds. One half of the females were gold HBR's and half were gray HBR's. From the inheritance pattern it is apparent that the half black body color must be x linked and dominant.

First Cross	Gray HBR Male (Gg)			
	X with HB	Y no HB	Gg Gray/Gold	
	females	males	factor	
Gold Red Female (gg)	X no HB	X w HB/X no HB	X no HB Y no HB	Gg
	X no HB	X w HB/X no HB	X no HB/Y no HB	gg

To prove this I then tried the reverse cross. I place a gold red male in with a gray bodied HBR female. All the resultant fry were gray bodied HBR's, and far superior to the parents. The female I had selected did not carry any of the gold trait. This resulted in all the fry (males and females) getting an X chromosome carrying the dominant HB trait.

The second cross looks like this:			
	Gold bodied red male (gg)		
	X no HB	Y no HB	grey/gold
Gray bodied	females	males	factor
HB red female (GG)	X w HB/X no HB	X w HB/Y no HB	(Gg)
	X w HB/X no HB	X w HB/Y no HB	(Gg)

Cont. on page 2

Cont. from page 1

You can see from the chart that all the fish carry the dominant HB pattern on the X chromosome, thus making them all half blacks. Also note that they carry one dominant gray factor and one recessive gold factor making them all gray bodied fish that carry gold gene.

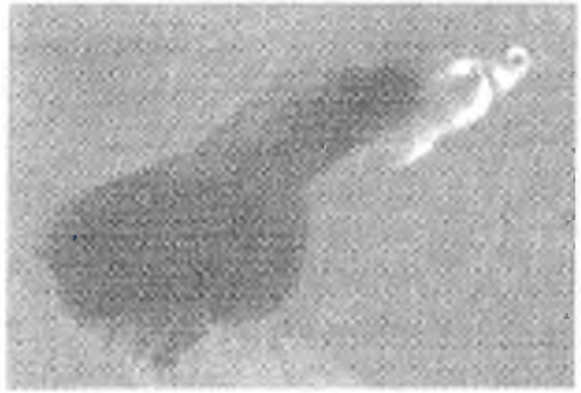

Photo Credit: Mike Khalid B/B Red PPGA Show 1998

Putting these genetics to practical use, I took the males from the second cross and crossed them back into the pure HB red parent line. This added both size and color to the closely inbred HB red line, while producing 100% HB reds. Some females will only carry the HB trait on one of the X chromosomes. If this happens then half of her male offspring will be gray bodied reds even when she is bred to a HB red male.

In summary, when outcrossing HB reds always use a red male and a HB female, then take the F1 HB red males (discard all the females) and cross them into females the parent HB red line. In my experience, doing this every three to four generations greatly enhances the size and vigor of the line. ■

IMPORTANT ANNOUNCEMENT

The San Fernando Valley Guppy Show is an IFGA Sanctioned Show and the club will adhere to the IFGA rules and regulations. Show information appears on page 9. Shipped in entries must arrive in time for benching. Every endeavor will be made to receive and bench those out of state entries arriving late due to carrier delays. Entries from clubs and individuals not in good standing with the IFGA will not be accepted.

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Allow four to six weeks for delivery of first issue.

ONE SURE THING LEARNED FROM THE GREAT GIS DEBATE

By Midge Hill

After many years I was able to locate an speak with Midge Hill. She and her husband, Floyd, moved out of state after his retirement. Midge is not active in the hobby - but I am sure she can be coaxed to write articles for the Roundtable. I am reprinting one of her articles from one of our past issues.

The great debate currently raging in many publications all over the country about GIS (Growth Inhibitor Substance) may leave us less than satisfied regarding the nature of the substance (if there is such a thing), but one valuable fact has been becoming more and more evident as we follow the pros and cons of the discussions, which can be put to immediate use while scientists do further prodding into the whys and wherefores of the elusive GIS. Many very notable aquarists and researchers have entered these debates and virtually all of them. . . no matter which side of the GIS debate they come in on. . . are in TOTAL AGREEMENT that frequent water changes produce larger and healthier fish!

Whether this is due to GIS (as some say) or whether it is caused mainly by the good, old-fashioned ammonium bi-products. . . or in fact anything affecting our water chemistry, would certainly be interesting and would surely make our work easier and/or more precise, but in the meantime, assuming that all these many people cannot be wrong, why not start at the other end and make use first of the fact that FREQUENT WATER CHANGES PRODUCE LARGER AND HEALTHIER FISH.

Having tried this myself over the past year, I can vouch for the improvement in these big show gups who seem to really thrive on frequent water changes. Time was when all tank replacement water was aged in big storage liners which took up a tremendous amount of space in the fish room, and the thoughts of storing enough water to replace one third of the water per week in each of 50 tanks would bring gasps of, "No, I couldn't possibly, there would not be any room left for the fish tanks themselves!" Others, such as Dale Murteeny, (and who can argue with the fish HE grows) kept repeating. . ."It's easy, you just change 1/8 of the water twice a week and replace it with tap water direct from the hose!". . . Having great visions of ick sprouting all over my gups from the adding of old water, I kept shaking by stubborn head, but somewhere along the line I finally worked up enough courage to try his techniques. And lo and behold, wonders of all wonders. . . no ick, no disease, just bigger and better guppies! The 1/8 water change barely lowers the water in the tank 1 or 2 degrees, and the amount of chlorine in this smaller addition is not enough to cause any problem to the tank's inhabitants, and is soon dissipated.

Another good trick learned from Dale, whose fishroom is the picture of efficiency, is to mark each tank with two lines. . . one indicates the 1/8 level to siphon down to. . . and the other indicates the refill level to replace up to. It works like a charm and you get precise measurements automatically each time.

So. . . no matter what it is you are siphoning out: bottom debris, ammonium bi-products, GIS, excess snails, baby guppies, or whatever. . . you will be ridding your tanks of the culprit lurking in the stagnant waters, and at the same time be adding a steady supply of fresh water and trace elements (which other leading aquarists claim is the main reason fish thrive on water changes anyway). No matter for what reasons, you come out ahead. . . and THAT makes sense! ■

AN AQUARIUM RACK FOR YOUR NEEDS

A flexible shelf design to suit your breeding requirements

By Michael Grabowski

It is the question all breeders have to face as their focus on the hobby increases. "What am I going to do with all these tanks?" The inevitable follow-up question is "Where can I possible put more?" Because everyone's needs and goals are different, as are the restrictions of available resources like space, water and power supply, and money, there is no one answer to these questions that will work for everyone.

The system is so adaptable because of its simple design. Entirely made of wood (pine 2'x4's), there are only three lengths of beams you need to use. Those lengths are determined by the chosen height, depth, and length you need the rack to have. Basically, the shelf system will have end pieces made of two vertical boards joined at each shelf level by shorter horizontal pieces representing the depth. The constructed, ladder-like ends are then joined across the length by your long beams which will also double as the actual tank-supporting shelves. The board are all secured in place by "eight-penny" (8d 2-1/2") nails.

In our case the shelf system is 70" high by 20" deep by 10' long, with shelves at heights of 3-1/2", 24", 46-1/2" and 70". You will need to do all necessary planning for your dimensions before you start cutting and nailing wood, as it will be expensive and slow trying to correct mistakes later. We chose our height because we have an 8' ceiling. A 70" top shelf allows enough room for 8" and 10" high breeder and fry tanks and a 12" high brine shrimp hatchery on the top shelf, as well as offering enough space below for three lower shelves. What we failed to consider before construction, however, was fitting in a top beam from which to hang lights or airline. If you, like us, are not allowed to poke holes in your ceiling or wall, you will want to allow room for such a top beam. As I said, you need to think of everything you'll need before you start building!

We chose a depth of 20" because that is the standard length for the common 10 gallon tank that most breeders use for their fish. If you rely on tanks of a different length, you can choose a different depth. The length you choose for the system is more arbitrary. We chose 10' because the "fish room" in our apartment is 12' long and a 10' system allows us to put some space on either side for access, extra storage, supplies, or whatever we might need to squeeze in. If you choose to make your rack longer than five or six feet long, you should build an extra "end piece" to place in the middle for extra support, as long 2'x4's will tend to warp from the weight in the middle without it. You should choose a length that takes into account the standard width of the most common tanks you use, and add an inch or so per tank so that they are easy to remove for bleaching and reinstall. The 10' length happened to work out well for us. With supporting "end piece" in the middle, the system is split into two 58" long halves that each accommodate five 10-1/2" side 10 gallon tanks, with a small space on each side of each tank.

Once you have decided on the appropriate dimensions, you are ready to obtain and prepare your wood. Be sure to get 2'x4's that are as straight as possible, and not warped. This could take awhile, as the longer pieces you start with get, the harder it is to find good straight ones. But take the time, as warped wood may not fit the system as well and provide the best support. You will need to get three long beams for each shelf you plan to have on your rack, plus four medium-length beams for the heights of the end pieces (six such beams if your rack will be long enough to require a middle support), and enough beams to cut into the joining depth pieces - one for each shelf for each end piece. For a four-shelf, three support rack like ours, we needed enough wood for 12 joining pieces.

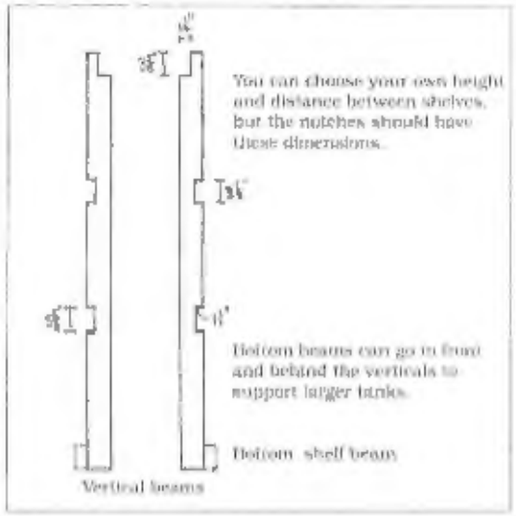
Once you have the wood cut to the correct lengths, you need to make notches in the vertical pieces. These notches will be slightly bigger than 1-1/2" deep by 3-1/2" high - large enough to snugly fit another 2'x4' piece in Lincoln Log style. These notches will provide an extra measure of support as the long shelf beams will thus be held in place not only by the nails securing them but by the wood they are set into. Thus you will be placing them at the appropriate spots on the vertical beams such that the tanks will be resting just above the tops of the notches. Remember, when deciding where you want the notches to go that you will need to allow enough height for each shelf not only for the tank, but also for you to be able to reach back to catch fish, scrape walls, or mess with filters. Be sure to give yourself several inches above each tank.

If you look at the diagram, you will notice that we cut the notches

for the middle shelves on the outside portions of the vertical beams, yet the top shelf notches were cut on the inside of the beams. On our rack the top shelf was reserved ahead of time for the shorter 2-1/2 and 5 gallon tanks needed for breeding and babies. Keep that in mind when you make your shelf. Notice also that we cut no notches on the bottom. This is because you will want to have as much strong wood on the bottom as possible to provide a good base for the rack. The beams can be nailed to the front and back of the vertical beams without need for support from the wood shelf, since they will already be on the bottom. Also, if you plan to keep larger tanks on the bottom shelf, you will need the extra inches provided by having beams in front and in back.

Cutting the notches out might look difficult, but it ended up not being so. Use a normal saw to make the 1-1/2" cuts, then use a hammer and chisel to knock out the piece along the 3-1/2" segment. You won't have the most beautiful, flat cut possible, but it will be suitable for the shelf's needs.

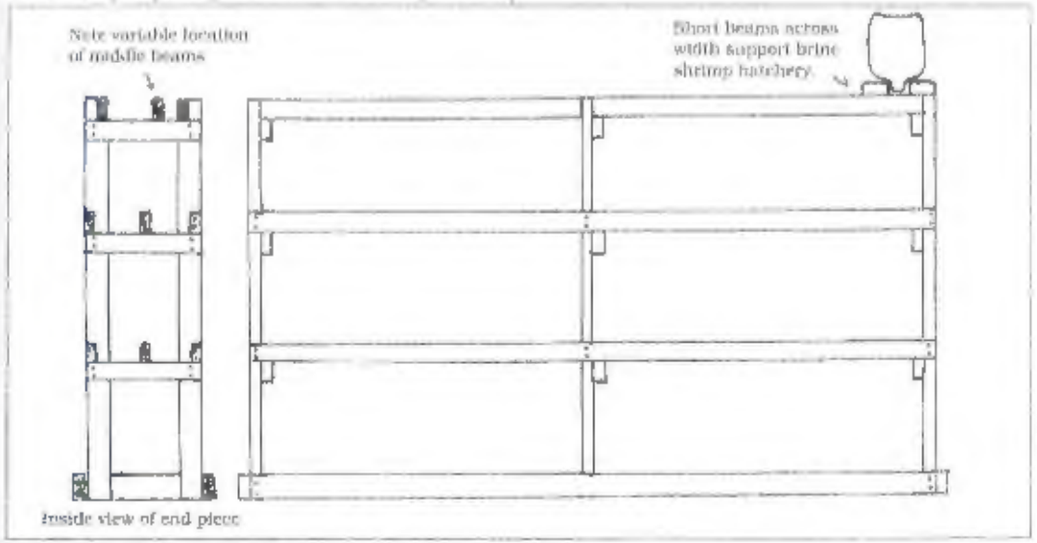
Next you will nail in the short joining pieces to construct the ends and middle support. Lay out the vertical beams so that their notches are perfectly aligned. The joining pieces will be nailed in so that their tops will line up with the bottoms of the notches. It is important that no part of the joining piece actually rises above the bottom level of the notch, as this would present a problem when it comes time to insert the lengths. These short pieces will not only be joining the vertical beams together,



they will also be acting as extra supports for the long shelf beams, so you should use two nails at each end.

Once the end pieces are constructed, you may want to paint all the wood with a good mildew-resistant paint. This will help seal the wood from water damage and reduce instances of mildew, both of which could eventually weaken your rack. A rack of our size requires two quarts of paint.

Cont. on page 6



Aquarium Racks from page 5

Once the paint is dry, you will be ready to put all the pieces together. You will probably want to do this in your fish room (with the fish temporarily relocated). The reason is that the final structure will probably be too big and too heavy to easily move from room to room once it has been built. You should nail in the backside bottom beams first, followed by the rest of the rear beams. You may find that, despite your best efforts, there is a slight warp or the notch is too tight to allow the long beam to fit. In this case, you will need to do some sanding. Use a coarse grain wood sandpaper to wear off some wood in both the notch and the beam at the point where it will be inserted. You should be able to sand enough down to eventually fit in the wood. Be sure to use two nails at each point, to keep the beams secure. Once the rear beams are in, you will want to nail in the top front beam in the event that you are placing it on the inside of the vertical beams as previously mentioned. It will be too difficult to do it once the structure is standing. Conversely, you will want to wait until the structure is up before you can nail in the corresponding top rear beam.

When the rear top and front beams are fixed in place, you can now stand the structure up. Be sure that you have considered the nature of the floor before you do this, though. If your fish room is in the basement or garage and on a concrete floor, you've got no worries. Go ahead and stand it up. If, however, you are planning on setting this on the carpet of a third floor apartment, with the apartment superintendent one floor directly beneath you, you will need to set down a platform of some sort to distribute the weight more evenly. A rack the size of ours, filled to capacity with tanks and fish, can weigh as much as 3500 pounds. All that weight needs to be spread out. We are using three 2'x4' plywood boards for this purpose. That reduces the load to about 150 pounds per square foot, which your floor should be able to take.

Alright, so now the rack is standing. Now you can place the middle length beams. These will not be nailed down. They will simply serve as extra supports for the tanks. By not fixing the middle beams in place, they can be useful for supporting non-standard sized tanks that aren't large enough to rest on both fixed beams in front and back. Simply move the middle beam forward or back as needed to accommodate the odd 2-1/2, 4, 5 gallon, or other strange tanks you find useful to keep around. Finally, nail in the front length beams. Again, you might have to do some standing in the event that the boards don't quite fit. Experiment, too, with different orientations of the beams, flipping them over or turning them end-over-end to achieve a better fit. Good luck with this part. This was where I was most frustrated in making our stand, being so close to completion and yet delayed by a poor fit.

Once the stand is up and construction is complete, there is one final step. You will need to lay down some felt weather stripping along the shelf beams. This material should be available at your local hardware store, in rolls of varying length and width. Get enough to cover all the long beams. You can get it with an adhesive backing, or without the backing if you nail it in with short tacks. This felt will act as a pad that can help level the tanks a bit if the boards are slightly warped. Again, in order for it to be effective, it needs to be on all the beams of each shelf.

Now your tank stand is finished and ready for your tanks and fish. But before you put everything in place, you may want to consider its usefulness in supporting accessories, such as lighting, air pumps and air line, power strips, brine shrimp hatcheries, etc. Here are some suggestions.

- **Lighting:** We feel that lighting from the top and as close to the front as possible is best for viewing the fish in our fish room. Such lighting is similar to the style of lighting your fish will receive on the bench, and you want what they look like in your room to be as close as possible to what the judges will see. Such lighting is easily attached to the ceiling, but if that is not an option you may want to consider installing a top beam, perhaps 18 to 20 inches above the top shelf, from which to hang the lights.

- **Air pumps and line:** On our top shelf we have placed a short plywood board to support our air pump. We are in the process of linking all the filters to a single piston pump, and will be supporting the airline chain above the tanks with U-shaped tacks nailed into the long shelf beams. Even if you have several pumps, it might be useful to be able to place them on one convenient board on the top, or any other shelf, as needed. Again, a top beam above the top shelf is useful for supporting the top shelf's airline, although it is not absolutely necessary.

- **Power strips:** Of course everything will need to be plugged in. Most power strips come with slots to hook into nail or screw heads. With the all-wood construction of the rack, finding a spot to fix one or more power strips should be a cinch.

- **Brine shrimp hatching:** Depending on what you use for a hatchery, either a board on a shelf or a pair of short beams running across the long ones should be adequate for your fish feeding needs. We use a large jug, supported upside down by the crossbeams, for our brine shrimp.

- **Other storage:** The short board on one of the shelves is a great way to store extra food and equipment where it is always handy. By not nailing the board down, you can remove it when ever you need some more tank space, and return it when you have the room again. For spare nets, you can screw in a hook anywhere on the structure to hang them from. There are countless possibilities for the ways you can adapt the system to suit your needs.

It is my hope that you can use this or a similar design to expand your fish room's capacity without having to expand your fish room. I feel this style of rack can allow you to efficiently and inexpensively deal with the various demands of equipment and space your guppies place on you as you continue to breed. Eventually, it is hoped that the success of our tank stand design will give us reason to come up with a good design for an award plaque display stand. ■

SHOW THOSE GUPPIES!

An inspirational message from your representative on the awards points committee.

By Michael Grabowski

We are preparing to enter what should be an exciting second half of the '94-'95 show season for the PPGA. If you look at the current award point totals for the first half, you will notice that our organization is well represented among the delta and veil classes. Of the 28 such classes exhibited through the fall, the club has members competing strongly (among the first five places) in 16 of them, and in 10 of those, we have members currently holding first or second place. The message is inherent in the numbers. Right now the PPGA is a very dominant group of breeders on the bench.

What you should keep in mind, however, as we go into the spring season, is that with several shows to go it is still anybody's game in any class. No one has a lock on any place. With over 800 points available in each main color class, and nearly 300 in each veil class, at each and every show, there is plenty of time and plenty of points to be lost or won. Someone in third or fourth or even further down the rankings can catch up and overtake the leaders, and the leaders can lose their positions, all too easily, even in one show, if the competition is there. As a club, we may breed the best fish in the country, but if they stay in your fish rooms, they will not get the points and no one outside our club will know they exist.

Along those lines, I want to encourage everyone! If you've got fish to show, **SHOW THEM!** Show them in quantity if you can, and most especially, show them consistently! It is not enough just to earn your points at our own local shows. The trend for the fall points shows that most first and second place point holders have exhibited at nearly every show. Results from each show indicate that many top point holders often don't get first or second place at every show, but they have sent enough fish to pick up available third or fourth points. You might have the best fish of a certain class at a single show, but if that is the only fish you send, someone else will pick up all of the other points and your contribution will be missed in the overall standings.

Remember, some of the best guppies in the country are being bred right here in our own fish rooms. Let's make sure we are not the only club in the country that knows about that! ■

BREEDING THE ALL RED GUPPY

By David M. Reaume, Juneau, Alaska

Something like three and a half years ago, a sport turned up in my cull tank. One of the young red male guppies that had been set aside because its caudal peduncle was too narrow, gradually developed extra red coloring over and beyond its belly and extending well into its gill covers. Although I had not attended a guppy show in almost thirty years, it was clear to me that this guy was special. Right then the sole goal of my breeding program became a new strain of all red guppy.

The original sport proved fertile and long lived, ultimately breeding not only with his daughters but with his granddaughters and (possibly) with his great granddaughters. I say possibly in the latter case because at that stage he and his grandson, shared the same three females. His prolonged fertility has since proven to be an exception.

Through the first five or six generations, the strain has been remarkably difficult to establish not only because of a high incidence of infertility in generations after the first, but also because the all red trait has appeared in only about 10 to 15 percent of the males and on top of that has skipped every other generation. These factors suggested to me that multiple genes were at work in combination and prompted me to look for help in establishing the strain. I did not want my all red guppies (which by the sixth generation has produced three 100 percent all red males) to go the way of the bleeding heart platy or Turwiler's famous butterfly betta. A call to Davidene Tait, then editor of the IFGA BULLETIN, put me in touch with Anne Rodriguez in Ventura, California. A transfer Anne and I made last summer has almost certainly established the trait in her tanks, thereby doubling our chances of eventual success.

The all red trait is maddeningly difficult for an amateur like myself to fix into a true breeding strain. Several obstacles and a number of undesirable variations keep cropping up. The main obstacle, as I noted above, is the tendency to infertility and generation skipping. Entire broods have been borne with only red smears on their bellies instead of the solid red coloration of the father. My guess is that the generation skipping is related to the choice of female and that the regularity of the skipping phenomenon (precisely every other generation producing ten to fifteen percent all reds, with the next generation producing only belly smears) is simply the result of my having had something like a fifty-fifty chance of picking a female with the right genetic package.

In recent generations "all red" females have begun to appear where in this case I use the term "all red" rather loosely. More precisely, my "all red" females show distinct red shading through the entire caudal peduncle, fading out at the gravid spot. I am now operating on the assumption that these all red females are carriers of the genetic cocktail needed to fix the strain. Some support for this hypothesis came from the fact that all of the males in the first-ever brood borne to an all red female were themselves all red (although only one qualified as effectively 100 percent all red). A second brood borne to another all red female is now two weeks old. We shall see whether the males in this batch come up to speed. If they do, the strain may finally be fixed.

Of the undesirable traits that have cropped up, the most annoying and regular are (1) snow white tips on the trailing ends of the dorsal, (b) semi-transparency of the caudal at its base, lending a "butterfly" effect to the caudal pattern, and (c) slightly humped backs in about 20 percent of the all red males (a defect that has never appeared in the males who are not all red).

On the positive side, the strain appears to be reasonably long lived, with life spans of 18 to 20 months having occurred with some regularity (at least in the breeder males I have allowed to live out their natural lives). Associated with the longevity is a tendency to slow maturation. At about three months the all red males can only be identified by a slight tinge of red about the gill covers, despite having distinctly red caudal fins and red upper bodies. Only after about six to seven months does the red extend down into the belly and on up to the "throat."

The genetic history of that first sport, at least as far as I can establish it, is quite varied. The brew it leapt from had three main ingredients: (1) the best red male I could find in a local pet store (probably a Singapore strain), (2) the best gold female I could find in that same local pet store, and (3) the best "flamingo ball black" brought back from Homestead, Florida's SUMMERLAND Tropical Fish Farm in the spring of 1991. Since then I have crossed in a red strain I bought from Rose and Leroy McCreary in the summer of 1992.

My setup is small and atypical. I have only six tanks and all are devoted to this one strain. Of the six, one is simply a fifty-five gallon cull tank. Because I prefer to have the strain perfected by someone else than that it be lost altogether (a distinct possibility given the frequency of power failures in Juneau and the ever present possibility of disease), I welcome inquiries and will part with specimens. My address & telephone are given below. ■

10746 Horizon Drive
Juneau, Alaska 99801
(907) 586-3445

SAN FERNANDO VALLEY GUPPY CLUB IFGA SANCTIONED SHOW

LOCATION

Hojo Inn
9401 Sepulveda Blvd.
North Hills, CA 91343
(818) 892-0751

DATES

April 1 and 2, 1995

SCHEDULE

Saturday, April 1, 1995
Registration, 9:00 am - 2:00 pm
Judging, 2:00 pm - 6:00 pm
Hospitality Room, Conclusion of Judging

Sunday, April 2, 1995
Open to Public, 9:00 am - Noon
Auction, 1:00 pm
Debonding, 2 pm

SHOW CHAIRPERSON

Mike Khalid
16651 Parthenia Street
North Hills, CA 91343
(818) 892-2458

SHIPPED IN ENTRIES

Mike Khalid
16651 Parthenia Street
North Hills, CA 91343
(818) 892-2458

PRIOR NOTIFICATION APPRECIATED!

All shipped in entries must be prepaid with correct entry fees and return postage included. No collect shipments will be accepted. Fish without return postage will be auctioned. Airmail, Express Mail, Air Freight & Air Express MUST BE SHIPPED TO MIKE KHALID AT THE ABOVE ADDRESS. All shipped entries must be received by **5:00 PM Friday, March 31, 1995.**

ENTRY FEES

Single Entry	$1.50
Tank Entry	$2.50
Breeder Entry	$3.50
Jr Class	$ .50 for
Singles or Tanks	

AWARDS

SINGLE-TANK-BREEDER

1st Place receives Plaque & Award Card
2nd thru 4th Places receive an Award Card

BEST OF SHOW

1st Place receives Plaque & Award Card
2nd thru 4th Places receive an Award Card
Best of Show Awards as follows:
Single Male Delta, Single Mall Veil/Swordtail, Female and Tank.

GENERAL RULES

1. All entries must be received by 2:00 PM, Saturday.
2. Judging will begin at 2:00 PM Saturday. Entries will be judged in accordance with IFGA Rules.
3. Exhibitor to determine class of competition in which entry is to be exhibited. Assistance will be available if needed at the time of registration.
4. All entries improperly classified will be disqualified.
5. All entries must have been born and raised in the exhibitor's tanks.
6. All entry fees must be prepaid.
7. Every precaution will be taken against loss of fish or other hazard, but the Show Committee and S.F. VALLEY GUPPY CLUB cannot assume responsibility for such loss.
8. Fish may not be removed from the show pen in the scheduled debonding without permission, at which time a member of S.F. VALLEY GUPPY CLUB will return the fish to the exhibitor.
9. Plants or decorative items will not be allowed with any entries.
10. Lighting will be standard overhead fluorescent.
11. Exhibitor must indicate on their entry form if they want any of their entries auctioned. A female from the same strain must be included with each male entry to be auctioned.
12. Fifty percent of the auction proceeds will be returned by S.F. VALLEY GUPPY CLUB.

ENTRIES

SINGLE ENTRIES

Single female or male shown in half gallon drum bowl, 3/4 filled with water. One female may be included with male entry, but only the male will be judged.

TANK ENTRIES

Two matched males shown in half gallon drum bowl. One female may be included, but only the males will be judged.

BREEDER FEMALES

Three matched females shown in one and a half gallon tank.

BREEDER MALES

Five matched males shown in one and a half gallon tank. Two females may be included, but only the males will be judged.

JUNIOR CLASS

These classes are open to anyone sixteen years of age or younger at the beginning of the show year.

NOVICE CLASS

Open to anyone who has not won an Annual Award, first through fourth. Only points acquired in the Novice Class will count towards the Novice Championship Award.

AUCTION

Exhibitors must indicate on entry form any entries to be auctioned. Females must be provided for all males. Exhibitors can send non-entry pairs or trios for the auction. SFV GUPPY CLUB will retain 50% of proceeds from auctioned fish.

CLASSES

75 Point Classes

TANK
AOC
AOC BI-COLOR
ALBINO
BLACK
BLUE
BLUE/GREEN BI COLOR
BRONZE
GOLD
GREEN
HALF-BLACK AOC
HALF-BLACK BLUE
HALF-BLACK PASTEL
HALF-BLACK PURPLE
HALF-BLACK RED
HALF-BLACK YELLOW
MULTI

PURPLE
RED
RED BI-COLOR
SWORDTAIL-DOUBLE
SWORDTAIL SINGLE
SNAKESKIN-SOLID
SNAKESKIN-VARIEGATED
YELLOW
JUNIOR
NOVICE

DELTA
AOC
AOC BI-COLOR
ALBINO
BLACK
BLUE
BLUE/GREEN BI COLOR
BRONZE
GOLD
GREEN
HALF-BLACK AOC
HALF-BLACK BLUE
HALF-BLACK PASTEL
HALF-BLACK PURPLE
HALF-BLACK RED
HALF BLACK YELLOW
MULTI

PURPLE
RED
RED BI-COLOR
SNAKESKIN SOLID
SNAKESKIN VARIEGATED
YELLOW
JUNIOR
NOVICE

FEMALES
AOC
ALBINO
BLUE/GREEN
BRONZE
GOLD
HALF-BLACK AOC
HALF-BLACK RED
PASTEL
RED
JUNIOR
NOVICE

VEIL
BODY/EYE COLOR
HALF-BLACK
SNAKESKIN
SOLID
VARIEGATED
JUNIOR
NOVICE

BREEDERS
FEMALE
MALE

SWORDTAIL
DOUBLE
SINGLE

QUESTIONS ABOUT THE ROUNDTABLE

by Mike Khalid

I have received a number of calls and questions have been raised about the Roundtable. Ninety percent of the questions asked were related to "Why wasn't my check cashed which I mailed in August or September, 1994?" or "Am I going to receive a Guppy Roundtable?" etc. The questions can be answered in chronological order.

Question 1
Why wasn't my check cashed?

Answer:
Since I was not involved in the PPGA until I was asked by the current president to conduct a financial balance sheet for the club, I was unaware that the previous editor and treasurer were holding checks for any reason. If the check you sent to the Guppy Roundtable has been cashed and you have not received the IPGA Bulletin for January/February, 1995, please send me a copy of the front and back of your cancelled check. You will be placed on the current subscriber mailing list. (Send copy of cancelled check to Mike Khalid, 16651 Parthenia St., North Hills, Ca. 91343.)

Question 2
Am I going to receive the Guppy Roundtable?

Answer:
If you have received the January/February, 1995, Bulletin, you will continue to receive the Bulletin for the remainder of the year. A complimentary issue of the Roundtable is being mailed to you and if you wish to continue receiving the Guppy Roundtable, please complete the application form on page twelve of this issue and mail it to the treasurer as indicated with your subscription fee.

Question 3
My subscription to the Roundtable was returned and I was asked to reissue the check for the Guppy Gazette. What should I do?

Answer:
If a check made out to the Fan Pacific Guppy Association was cashed and you received the Guppy Gazette, please send me a copy of the cancelled check (front and back) so the committee can take appropriate action.

Question 4
I have purchased the two volumes of the Guppy Roundtable. Are there going to be more volumes available?

Answer:
Yes, we have already made arrangements to produce volume three with addendums for volumes one and two. If you have already purchase volumes one and two, please mail a post card with your name and address as your registration to the treasurer.

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Blues, Greens Halfblack AOC's, Halfblack Blues, Reds, Variegated Snakes.
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Important note: Subscibers to the Guppy Roundtable in the past years have mentioned to me that subscription checks mailed to the club have been deposited in accounts other than the official club account. If any of you are holding such cancelled checks, please send copies (front and back) to the treasurer of the PPGA.

The other issue is the number of complaints received regarding the switching of the checks from Guppy Roundtable subscriptions and purchase of bound publication to the Guppy Gazette. Again, please send any information regarding this irregularity to the treasurer, Ron Hongo, 453 Via Val Verde, Montebellow, CA 90640.

SMALL SETUPS: SELECTING A SECOND STRAIN

By Mike Grabowski and Elaine Roy

Having a small number of tanks (i.e. 15 or less) doesn't mean that one can't produce show quality fish or win a color class championship. With a dozen tanks I came in second last season in the blue-green bicolor delta class. Accomplishing this usually means that the small breeder keeps only one strain. However, this can get to be dull after awhile. It can even be discouraging if something is not going well with that strain. Often, keeping a second strain renews interest and relieves boredom.

The most practical choice for a second strain would be one that could eventually be crossed into what you already have to improve it or create something new. It makes sense to keep b/b reds and reds and red albinos, b/b pastels and b/b aoc's, for example. To conserve space, I raised b/b aoc's and blue/green bicolors. The females of the two strains were raised together in five gallon tanks since they were easy to differentiate. The same was true of the males if I didn't have enough in each drop to justify a ten gallon tank. When mixing fish it is important that similarly-aged fish are used and that you know without a doubt that they are healthy.

One of the problems associated with the second strain is wanting a third, a fourth, etc. strain before being ready to expand the set up. For the novice, I recommend devoting almost all of the tanks to the primary strain of interest, then using just enough tanks to keep the second strain going. A common mistake made is acquiring and discarding strains without trying them for a few generations before declaring dissatisfaction. Keep working with a strain long enough to learn something from it. This way one can breed one strain very successfully instead of limiting one's success by doing too much at one time. ■

GUPPY DEWORMER

By Craig Smith

For many months for PPGA has been working on a fish dewormer for both nemetodes and protozoa. After working on many formulas we finally modified a formula suggested by Ed Chisson.

The formula consists of beef heart processed very fine, one percent panacur, a horse wormer found in most feed stores or from a veterinarian, one per cent metronidazole acquired from a veterinarian, one per cent tetacycle and spiraling powder is also added to this mixture. Measuring this mixture in grams simplifies it. A calorie scale can be found in most drug stores which measures in grams.

The guppies seem to love this formula and given twice at 14 day intervals, every other month seems to eradicate the worms and enhance the general well being of our fish. ■

Pan Pacific Guppy Association
16651 Parthenia Street
North Hills, CA 91343

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Pan Pacific Guppy Association
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GUPPY ROUNDTABLE

THE OFFICIAL MONTHLY PUBLICATION OF THE
PAN PACIFIC GUPPY ASSOCIATION

VOL. V ISSUE III March 95

FROM THE PUBLISHER

Please accept my profound apology for the delay in producing this March 95 issue.

I take full responsibility for the delay. Besides setting up a new Power Macintosh 8100 system and getting all the bugs out, we were short handed in the production department. This week we have a full crew and are moving along rather rapidly.

Remember the success of this publication, like any other publication, depends on articles written by our club members and readers. It's easy to copy articles written during the past 30 years, they will only be reprints. It may become necessary to use some of the good old articles so the newcomers can understand how it was done in the good old days, but the fish appearing on the show benches today are by far superior to the fish shown in the 60's and 70's. So let's see some new articles on how its done. We on the production staff have a challange ahead of us and we have to catch up to three issues, so your patience help will be appreciated.

PATH OF A NOVICE

By Craig Smith

Breeding show guppies can be as easy or difficult as a person wishes to make it. If a person takes the time to absorb as much knowledge and information as possible from our many old-timers, breeding, raising and showing guppies can be very rewarding.
I've raised guppies and numerous other fish throughout my life. I became serious about guppies again in December of 1991 when my wife bought our son a fish tank for Christmas. Off to the pet store we went. After many arguments, we returned home with $75 worth of equipment and our first trio of guppies. Soon after, we had a drop from our Singapore mulli's, and we needed another tank. Another trip and $100 and we had a new tank for our drop. I begin making the rounds to all the local and some not-so-local pet shops. I knew there had to be better guppies than

Photo: Mike Khalid - Yellow Circa 1979

Cont. on page 3

SPECIAL ACCOUNTING COMMITTEE REPORT

By Mike Khalid
Committee Chairperson

So we are in a deep hole and coming out of it. To bring you all up to date from the Special Finance Committee has been very active in trying to resolve some of last years accounting problems. Numerous letters to the previous editor have only brought smoke, however on the advice of one of our committee members, we have decided on the following. Anyone who has sent membership dues/subscriptions to the Guppy Roundtable and has not received any of the issues, please send a copy of your cancelled check (front & back) to the editor and you will receive a full year's subscription.

If you ordered **Volume 1 or 2** and have never received either, please send a copy of your cancelled check (front & back) to the editor and **you will receive your order.** In the event your check was cashed and you received a publication other than what you ordered, please send a copy of your cancelled check (front & back) with your letter of explaination.

Regarding checks made out to the PPGA and the IFGA prior to January 31, 1995 and deposited in accounts other than the official IFGA account or the PPGA account, please rush a copy of your cancelled check (front & back) to the editor and receive a **full year's subscription to the Guppy Roundtable.**

Unfortunately, this publication will only reach the current 1995 paid members subscribers, so if you have a friend or club member who has had this experience, please have them contact me at (818) 892-2456 or (818) 894-0493 daytime.

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Novice from page 1

what we had. We also raise and breed Paint horses and I've learned to start with the best stock we could find. So my quest for the perfect guppy began. I found better, or what I thought were better, guppies and $200 later, had a new tank of many fine guppies.

I've also learned that in most areas of life, knowledge must come before success. I purchased several books and magazines and thus, discovered the IFGA and our local club, the PPGA. I had to check this organization out, but not before I had added 5 more tanks. (All of these tanks were in my office which is in our home.) Needless to say, my wife was wishing she had never purchased the first tank. I am one of those individuals who thinks, "if one is good, two is better." I just wonder if anyone else reading this article has the addiction to guppies that I was acquiring. Maybe we should start a Guppies Anonymous. My wife would be the first to enroll me.

Upon contacting the PPGA, I inquired about meetings and spoke to Jim Alderson, the President. It just happened that a meeting was scheduled for the following Sunday. I asked Jim if he sold his guppies and arranged to purchase several trios. I naturally needed more tanks to house the new fish and future drops. . .another trip to the pet store added 10 more tanks and a loud scream from my wife. I was set and assured my wife that this would be all I needed to raise guppies. Can anybody relate to this last remark?

I could hardly wait for Sunday. I arrived at Mike Khalid's house before anyone else. You can imagine how I felt when Jim handed me several trios of his prized blue/green bl's and blues. His fish made mine look like feeders. The club was having an auction at the meeting, and I left with 6 trios, a membership to PPGA and a promise to return. On my way home, I decided to get rid of all my Singapore guppies. The addiction to guppies had taken hold.

I soon had 30 tanks in my office and many guppies. I didn't ask for much help. Why should I? I had read all the TFH books on guppies and assumed the authors to be experts. Big mistake on my part. I went through the complete gambit of diseases within short order. I fed Tubifex worms, Brine shrimp and an assortment of dry food. Jim was real glad to see me in those days. I usually left his house with $100 to $200 in guppies and Jim just shaking his head. The guppies I acquired from Jim generally died in a few days to a week. So much for my way. I asked for help. Jim was more than glad to share his techniques with me.

These are some of the suggestions he gave me:

1. Remove all gravel from tanks. He instructed me to raise my guppies on bare bottom tanks. The reason is that food particles become trapped in the gravel allowing bacteria to grow. If you can't see it, you can't remove it.
2. Use either box filters with marbles for weight and floss, or sponge filters. I prefer box filters for the ease of bleaching them, but sponge filters can be run through the washing machine with a little bleach.
3. Bleach all tanks with 1 cup bleach per 10 before using. I believe this suggestion to be one of the most important. I bleach all my tanks every 8 weeks to insure a disease free room and to remove any growth-inhibiting enzymes from the glass.
4. Never feed any worms. My feeding program starts with Brine shrimp in the morning, beef heart at 5 or 6 and Brine shrimp at 9 PM. I also try to feed dry food as many as 4 or 5 times in between. My fish are also dewormed every other month.
5. Set up the best male breeder with 4 females and take the best two drops. Have 2 lines per color class and cross these lines every 4 or 5 generations.
6. Never crowd your fish. One male per gallon. I use 2.5 gallon tanks for breeders, 5 gallon tanks for drops and raise my show males in 10's and long 20's.
7. Cull! Cull! Cull! You can never cull too much. Try the reverse cull method (i.e. cull all but the 10 best males at 2 months.)
8. Never try to raise more color strains than your setup will allow. Ten tanks per color strain is the minimum.
9. Have fun and remember this is a hobby.
10. Acquire the best stock you can. Start out with the best and you will be money and time ahead.
11. Join a club in your area.

These suggestions from Jim have given me a little success on the show bench. I would suggest to any novice to find an old-timer and to stick to them like glue, picking their brain for any information possible on raising and breeding guppies. Their experiences can save you a lot of time and money. Jim always tells me that he has made the same mistakes 3 or 4 times. I can take his advice based on his experience. I feel fortunate to have Jim Alderson in the PPGA to acquire the best advice and stock. You only get out of the hobby what you put into it. Good luck! ■

ANOTHER VARIETY OF HOME MADE FOOD

By Luke Roebuck, PPGA

Most hobbyists are probably familiar with the traditional home prepared foods that involve chicken or beef liver or beef heart. These foods have been around for decades and are still traditional and staple favorites for may hobbyists. Guppies, like humans are omnivorous and require a varied diet in order to obtain all vital minerals, vitamins, amino acids etc. . . for healthy, disease free growth. There is probably a different recipe variety for every guppy breeder in the nation. However, it is well known that the major ingredient of any home prepared recipe is usually high protein, meaty foods such as fish, liver, shrimp, beef heart etc. The variety which I will discuss involves chicken liver.

Purchase one 3-4 oz. container of fresh chicken liver from the grocery store. You will also need to have in stock at least 1-2 oz. of freeze dried krill or plankton, some wheat germ, fresh spinach, a pinch of salt and multivitamins, also cod liver oil is helpful. First, in a blender, place the dry krill and thoroughly grind to a fine powder then empty into a small bowl. Pour all the chicken liver and its liquid into the blender and add equal volume of water. Blend on high speed until liquefied to a thick consistency. Add powdered plankton or krill and blend for a few seconds, then add the remaining ingredients, 4-5 leaves of spinach, 1/2 tsp. cod liver oil or 1 multivitamin capsule and pinch of salt. Pablum baby rice cereal may be substituted for the wheat germ or used in combination. I add just enough to create a thick paste of peanut butter consistency. Blend all ingredients thoroughly.

You need to have one to three large empty peanut butter or jam jars to place the freshly blended paste into.

Fill one large pot or saucepan 2/3 full with water and place on stove. Place jars of paste into the saucepan of water, making sure you have placed enough water to surround the jars of paste without overflowing the pan. Bring to a slow-medium boil and simmer for 20 minutes or until the paste turns light brown and the liver begins to coagulate. Then you need to have suitable containers to place the cooked paste into for storage in the freezer. I use old fish flake containers and mini ice cube trays to place the fish paste into. First let the jars cool down after cooking, then spoon the paste into the containers for freezing. Remember, if you keep them in large containers, it will be more difficult to obtain feeding portions for your fish.

You can also use Ziploc sandwich bags and place one or two table spoons in each bag. Flatten the paste out so as to fill the entire bag when frozen so it will easily break into feeding sized portions. Your fish will love this new variety and it makes an excellent variation to the beef heart or egg paste used by many breeders. ■

RANDOM NOTES

By Frank Holcomb

The Split-Fin Gene

Two contests against my theory of the split-fin gene being carried on the "Y" chromosome, and both by persons who really know their genetics! Midge Hill covered her thoughts in a foot note to my article in Guppy Roundtable and Jim Kelly wrote me claiming the offending genes to be holandric and the inheritance pattern the same as in the human disease, hemophilia. He, Jim, believes that females act as carriers, negligibly displaying symptoms themselves, and the males become sufferers only if they have inherited the 'split' X chromosome. Jim points out that if it was on the Y chromosome, the pattern would embrace all the males, and this isn't so. Makes sense, Jim, and you do claim to have proven that the holandric theory applies here?

Jim Kelly also contests my malnutritive theory, in which I stated that I believe another causation of split-fins could be deficiency of vitamin B-12. Jim says this was tested, under control-tank conditions, and the

Cont. on page 5

A GRAIN OF SALT

By Bennie Johnson

Complexity in raising guppies manifests itself in many forms. . . from the small minnow's name, Poecilia Reticulata (formerly Lebistes Reticulatus), to the exploding population one encounters when breeding that first pair of guppies. (If a pair produces 60 fry of which 35 are females, these females can produce 2100 or more descendents within a period of 4 months!)

Every week we are bombarded with an unlimited number of individual food formulas, more health and color products, types of medicines to treat sick fish, various types of filtration systems, formulas for maintaining proper pH factors in your water, technical advances in genetics. . .more problems, more knowledge, and more choices.

I, for example, encountered little or no problems in hatching brine shrimp to feed my fish until I began to read and apply many of the umpteen formulas revealing the 'proper' way to hatch these little creatures.

Maintaining a good temperature in my tanks by using incandescent lighting for approximately 16 hours a day, with gradual cooling during the night hours did not seem to manifest any major problems. Then I read all about the tubular fluorescent lamp that provides a close approximation of daylight with little heat emitted or transmitted by radiation. This was great. . .until I discovered my fish were chilling because the temperature had dropped about 15°.

The next move was to explore the thermostatically controlled aquarium heaters which boasted a constant 24 hour temperature control. This was beautiful until the thermal equilibrium was placed off-balance by that faulty little automatic device called a thermostat. Yes, my situation became very complex because I boiled a 30 gallon tank housing my favorite guppies which were about ready for the big show.

We are bombarded with literature and numerous talks on the use of hormones for color tests on guppies. This can become so complex that many people seemingly adopt non-literal interpretations of the uses of hormones and wind up exterminating their guppies.

All information in general should be approached with 'a grain of salt'. Sure 'facts' continue to be publicized long after they have become obsolete. Often the people who gather and distill the information are middlemen who sometimes do not understand the fine points, facts and relative significance of the basic data in their hands. An expert in one part may have a dangerously small insight into another part of the same field, or his information may well be an oversimplification of a very complex subject.

All of which means that you should screen and evaluate all the data you read and hear before applying it to your complex little guppies. ■

Notes from page 4

vitamin B-12 or lack of it, made no difference. Hm-m-m. And how do you account for the fact that the use of vitamin B-12 rapidly repairs fin damage and splits? (Something inconsistent there, somewhere.)

Just a Thought

Have you, like me, ever looked at a guppy and thought of the many thousands of years that little chain of life has been carried forward. . from the very beginning of life, through all its various stages of evolution, from the first guppies to now, and the countless generations passing this life forward from parents to offsprings. . all to end where? Right there in my fish tank! And I'm the little god who shall decree whether it is to continue. Rather a sobering thought of a responsibility difficult to comprehend. ■

THE NAME OF THE GAME IS FANCY GUPPIES

By Norman Blumenthal

If you truly appreciate exotic fish, and enjoy the excitement of a game that challenges all of your skill, knowledge, cunning and luck, then the name of your game is FANCY GUPPIES. It's as much of a gamble as Las Vegas, and while not everyone wins, at least there are no real losers. But the game is not as simple as it might first appear, and you may be assured that Mother Nature operates a tougher house than any of the casinos in Las Vegas.

It may help to understand just a few of Mother Nature's house rules for the game. First, it takes a combination of two recessive genes to express themselves (phenotype). Second, most of the desired characteristics that separate the beautiful Fancy Guppy from the common wild guppy are recessive. With this in mind, assume for the sake of simplicity that each of five characteristics that you desire (i.e. large body, delta tail, large flowing dorsal, clear rich blue caudal coloration, and uniform blue body coloration) is controlled by a single gene. Assume further that your selected breeding pair are both heterozygous (have one dominant and one recessive gene) as to each of the desired characteristics. What are your odds of getting all of the desired characteristics in a single male out of your first cross? Would you believe odds of 2,048 to 1? I warned you it was a tough game. Now, assume that each of the desired characteristics are the result of a combination of at least two different recessive genes (most of the above characteristics are known to be controlled by multiple genes), what are your odds of getting all five characteristics in a single male? A mere 33,554,432 to 1. Now you know how really tough Mother Nature can be. Before you despair, let me hasten to tell you that the game can be played with loaded dice. They will not allow you to win every time, but they will give you a good fighting chance. The name of the loaded dice is breeding stock that has been closely inbred for several generations. With close inbreeding on a selected basis some of the desired characteristics will be homozygous (both dominant or both recessive), so you have really changed the characteristics of the game entirely. With some assurance that as to the homozygous characteristics that you will receive constant results, you may now focus your attentions upon fixing the other desired characteristics in your strain.

Assuming the strain for which you select your breeders are inbred, you come to the problem of selecting the male. While you can see the characteristics that some of his genes will reflect, the selection of this fish will be basically a matter of compromise. For the reasons stated, no one fish is likely to have all of the characteristics that you desire. Look at his brothers and find out as much as you can about his father and grandfather. If they have some of the missing characteristics, you are ahead of the game.

Now comes the wild card in the deck. The female shows little indication of her genetic make up. She should be a sister or close relative of your selected male, but beyond this there are no hard and fast rules, and I will merely pass along some of the advice that I have received from expert guppy breeders. If you have mentally picked the longest and biggest female in the tank, well don't. The smart money is riding on the short, stubby fat gal. I know that the largest female that I have ever owned threw off the smallest males, and the stubbiest female that I have owned have thrown off my large and most elegant males. I have compared notes on this observation with several experienced breeders, and all concur in the selection of the short, fat gal.

There are a number of theories being popularly advanced that the shape of the caudal of the female gives some suggestions as to her genetic make up. I can neither confirm nor deny any of these theories, but will pass them along for what they are worth. A recent survey in this regard done on the west coast (Editor's note: See Guppy Roundtable, October 1988) would suggest that of the three basic tail types (round, shark and box) by far the largest number of delta males were produced by females with round tails, followed by box tails and shark tails placed last. On the other hand, the famous breeder and author, Larry Konig, uses only shark tails. Another well known breeder looks only to the height of the tail, and still another looks for the angle of flare in the tail. Most concur that in the one half and three quarter black strain that the shark tail is the preferred selection. It would appear that the results vary from strain to strain, and that experience with a particular strain will give you the best indications. If

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Name of the Game from page 6

you have no such experience, select a round tail with the greatest angle of flare and height.

With the advent of the modern fancy guppy, a number of color strains have females which show color in their caudals. In the red strains there is usually a substantial dark area with some indications of red, blue, green or yellow. For clear bright red coloration in the male, yellow is the suggested choice in the female according to the "smarts." Probably the first color strain to show coloration in the tail of the female was the blue strains. Good blue coloring in the tail of the female is the desired choice. With greens most of the tails will be clear, and results will depend on individual strains.

One last word. With inbred stock, your first cross will likely produce no dramatic results (and no nasty surprises, either). However, you should end up with a number of high quality fish, and hopefully, some should be better than their father. At any rate, with selective breeding, you have a splendid chance to really improve your strain, AND THAT IS WHAT THE GAME IS ALL ABOUT. ■

. . .So just don't try 'an console me, Mike, I lost because those !#&! judges don't know what the !@#*& they're doing!!!*

ENHANCING BOX FILTRATION

By Luke Roebuck

Most of the major breeders today who raise and show guppies advocate the use of box filtration or sponge filtration for several practical reasons.

Due to the large number of tanks needed to raise several strains of show guppies, it is most practical to use a large heavy duty air pump or air blower with all filters connected in series. This is most economical and practical over under gravel filters, canister filters and other types of fancy filtration which require more individual maintenance. This is especially so when you consider the average advanced guppy breeder has 30-50 tanks to filter and maintain.

However, one main draw back to the simple air driven box filter method is they are limited in efficiency by the amount of air that is pumped through it. Also most of the gas exchange needed to

purify the water takes place at the surface of the water where it contacts the air. Box filters are not efficient in drawing the water air interface unless they are enhanced by a power head pump which will accomplish two major items.

1. Filtration will be tripled by power head assistance due to more gallons per hour (GPH) passing through the media at the air-water interface.
2. Gas exchange will be enhanced at the air-water interface due to turbulence created at the surface constantly scouring the water which is exposed to the air.

Since much larger flow rates are possible and in effect, you will have to consider the following: How do you maintain good mechanical and biologic filtration in the filter without clogging the media. Simple, by using the right combination of gravel size and sponge filter media. Optimum gravel size is 3/8" per gravel, not too small to clog and not too big to lose filtration efficiency and surface area to volume ratio.

Sponge filter media with course sand size passes has been found to be the optimum which will allow good biologic and mechanical filtration and will go for a long time before requiring cleaning. The diagram shows the simple set up. The advantage of the gravel is to hold the filter down so it doesn't topple over from being top heavy.

You might wonder about the expense, and powerheads require individual electrical sockets. Well, consider a powerhead such as Hazen 201 runs on 4.5 watts which is very low. Typical house-

Cont. on page 11

SAN FERNANDO VALLEY GUPPY CLUB
IFGA SANCTIONED SHOW - APRIL 1 & 2, 1995

AOC TANK
1 Dan Whitner
2 Dan Whitner
3
4

AOC DELTA
1 Dan Whitner
2 Dan Whitner
3. Dan Whitner
4

AOC BI-COLOR TANK
1
2
3
4

AOC BI-COLOR DELTA
1 Jim Alderson
2 Jim Alderson
3 Jim Alderson
4

ALBINO TANK
1 Luke Roebuck
2 Luke Roebuck
3 Jim Alderson
4 Jim Alderson

ALBINO DELTA
1 Jim Alderson
2 Jim Alderson
3 Luke Roebuck
4 Frank Chang

BLACK TANK
1 Luke Roebuck
2 Luke Roebuck
3 Luke Roebuck
4 Luke Roebuck

BLACK DELTA
1 Luke Roebuck
2 Luke Roebuck
3 Luke Roebuck
4.

BLUE TANK
1 Jim Alderson
2 Jim Alderson
3 Jim Alderson
4 Jim Alderson

BLUE DELTA
1 Jim Alderson
2 Jim Alderson
3 Jim Alderson
4 Jim Alderson

BLUE-GREEN BI TANK
1 Elaine Poy
2 Elaine Poy
3 Elaine Poy
4 Elaine Poy

BLUE-GREEN BI DELTA
1 Elaine Poy
2 John Allen
3 Elaine Poy
4 Mike Khalid

BRONZE TANK
1 T & P Allen
2 T & P Allen
3
4

BRONZE DELTA
1 T & P Allen
2 Eugene Golimowski
3 T & P Allen
4 T & P Allen

GOLD TANK
1 DQ
2 DQ
3 DQ
4 DQ

GOLD DELTA
1 B. VanDen Langenberg
2 B. VanDen Langenberg
3. DQ
4 DQ

GREEN TANK
1 Jim Alderson
2 Elvis & Marie Bryant
3
4

[redacted]
1 Jim Alderson
2 Jim Alderson
3 Jim Alderson
4 Victor Mazzella

H/B AOC TANK
1 Jim Alderson
2 Jim Alderson
3 Jim Alderson
4. Jim Alderson

H/B AOC DELTA
1 Jim Alderson
2 Jim Alderson
3. Jim Alderson
4 Jim Alderson

H/B BLUE TANK
1 Craig Smith
2 DQ
3 DQ
4 DQ

H/B BLUE DELTA
1 Craig Smith
2. Craig Smith
3 Jim Alderson
4. Craig Smith

H/B PASTEL TANK
1 Elvis & Marie Bryant
2 Joe Rankin
3 Joe Rankin
4 Gary Mousseau

H/B PASTEL DELTA
1 Joe Rankin
2 Joe Rankin
3 Joe Rankin
4 Elvis & Marie Bryant

H/B PURPLE TANK
1 Gary Mousseau
2 Steve Kwartler
3 Steve Kwartler
4 Ramiro Carbonell

H/B PURPLE DELTA
1 Ramiro Carbonell
2 DQ
3 DQ
4 DQ

H/B RED TANK
1 Jim Alderson
2 Jim Alderson
3 Steve Kwartler
4 Steve Kwartler

H/B RED DELTA
1 Jim Alderson
2 Jim Alderson
3 Steve Kwartler
4 Steve Kwartler

H/B YELLOW TANK
1 Gary Mousseau
2 Elvis & Marie Bryant
3 Gary Mousseau
4 Elvis & Marie Bryant

H/B YELLOW DELTA
1 Elvis & Marie Bryant
2 Elvis & Marie Bryant
3 Elvis & Marie Bryant
4 M. & M. Golimowski

MULT. TANK
1 Steve Kwartler
2
3
4

MULT. DELTA
1 Steve Kwartler
2 Steve Kwartler
3 Steve Kwartler
4 Mike Khalid

PURPLE TANK
1 Jim Alderson
2 T & P Allen
3. Jim Alderson
4 Gary Mousseau

PURPLE DELTA
1 Jim Alderson
2 T & P Allen
3. Jim Alderson
4 Kevin & Jane Collins

RED TANK
1 Jim Alderson
2 Jim Alderson
3 Jim Alderson
4 Gary Mousseau

RED DELTA
1 Jim Alderson
2 Jim Alderson
3 Jim Alderson
4 Tom Humphreys

RED BI-COLOR TANK
1
2
3.
4

RED BI-COLOR DELTA
1 Chuck Bretz
2
3
4

SWORDTAIL DOUBLE TANK
1 Bob Resech
2 A. & P. Wagner
3
4

SWORDTAIL DOUBLE
1 Mike Khalid
2 Randy McDonald
3. Randy McDonald
4 B. & B. McGill

SWORD SINGLE TANK
1 A. & P. Wagner
2 Bob Resech
3. A. & P. Wagner
4

SWORD SINGLE
1 A. & P. Wagner
2 Bob Resech
3 A. & P. Wagner
4 John Allen

SNAKESKIN VAR. TANK
1 DQ
2 DQ
3
4

SNAKESKIN VAR. DELTA
1 Jim Alderson
2 Bob McGill
3. DQ
4 DQ

JUNIOR TANK
1 Kristen Carbonell
2 Keith Golowski
3 Keith Golimowski
4

JUNIOR DELTA
1 Keith Golimowski
2 Kristen Carbonell
3 Kristen Carbonell
4 DQB

BREEDER MALE
1 Jim Alderson
2 Jim Alderson
3 Craig Smith
4 Luke Roebuck

BREEDER FEMALE
1 Craig Smith
2 Craig Smith
3 M. & M. Golimowski
4 Dan Whitner

BLUE/GREEN FEMALE
1 Dan Whitner
2 Victor Mazzella
3. Craig Smith
4 Craig Smith

BRONZE FEMALE
1 Eugene Golimowski
2 T. & P. Allen
3 T & P Allen
4 Eugene Golimowski

H/B RED FEMALE
1 Craig Smith
2 Craig Smith
3. DQ
4

RED FEMALE
1 Craig Smith
2 Craig Smith
3 Lloyd Groenke
4 Lloyd Groenke

BLACK FEMALE
1 Craig Smith
2 Craig Smith
3
4

BODY/EYE COLOR VEIL
1 Jim Alderson
2 Craig Smith
3 M. & M. Golimowski
4 M. & M. Golimowski

SOLID VEIL
1 Craig Smith
2 Craig Smith
3. Craig Smith
4. Craig Smith

VARIEGATED VEIL
1 Craig Smith
2 Craig Smith
3 Craig Smith
4 Bob Resech

SNAKESKIN SOLID TANK
1 Bob VanDen Langenberg
2 Bob VanDen Langenberg
3
4

SNAKESKIN SOLID DELTA
1 Jim Alderson
2 Frank Chang
3 Bob VanDen Langenberg
4 Bob VanDen Langenberg

YELLOW TANK
1 Bob VanDen Langenberg
2 Bob VanDen Langenberg
3 [redacted]
4

YELLOW DELTA
1 Bob VanDen Langenberg
2 Bob Vanden Langenberg
3 DQ
4

NOVICE TANK
1 Craig Smith
2 Craig Smith
3 Kevin & Jane Collins
4 Craig Smith

NOVICE DELTA
1 Craig Smith
2 Craig Smith
3 Craig Smith
4 Craig Smith

AOC FEMALE
1 Joe Rankin
2 Joe Rankin
3. Craig Smith
4 Craig Smith

ALBINO FEMALE
1 Craig Smith
2 Craig Smith
3. Craig Smith
4 Eugene Golimowski

GOLD FEMALE
1 Mike Khalid
2 Bob McGill
3.
4

H/B AOC FEMALE
1 Craig Smith
2 Craig Smith
3 Craig Smith
4 M. & M. Golimowski

JUNIOR FEMALE
1
2
3
4

NOVICE FEMALE
1 Craig Smith
2 Craig Smith
3 Chuck Bretz
4 Craig Smith

H/B VEIL
1 Gary Mousseau
2 Craig Smith
3 Bob Resech
4 Jerry & Rose McCready

SNAKESKIN VEIL
1 Bo Klair
2 DQ
3
4

JUNIOR VEIL
1
2
3
4

NOVICE VEIL
1 Craig Smith
2 Craig Smith
3. Craig Smith
4 Craig Smith

BEST OF SHOW

BEST OF SHOW TANK
1. Jim Alderson (Red)
2 Luke Roebuck (Albino)
3. Jim Alderson (Blue)
4 Jim Alderson (H/B AOC)

BEST OF SHOW DELTA
1 Jim Alderson (Blue)
2 Jim Alderson (H/B AOC)
3 Jim Alderson (Red)
4. Jim Alderson (Albino)

BEST OF SHOW VEIL
1 Craig Smith (Novice)
2 Jim Alderson (Body/Eye Color)
3. Craig Smith (Variegated)
4 Gary Mousseau (H/B)

BEST OF SHOW FEMALE
1 Craig Smith (H/B AOC)
2 Craig Smith (Red)
3. Craig Smith (H/B Red)
4 Joe Rankin (AOC)

JUDGES
Paul Gerele
Jim Alderson
Frank Chang
Steven Kwartler
Paul Blood

ASSISTANT JUDGES
Mike Khalid
Elaine Poy
Craig Smith
Ron Hongo
Bob Lewis

[redacted]
Chuck Bretz
Luke Roebuck
Bobby Dean

385 ENTRIES

GUPPIES. . . .UNPLUGGED

By Elaine Poy

It is cost effective to heat an insulated fish room when many tanks are involved in one's breeding program, but I am referring to raising guppies in small setups without the use of in-tank heaters. I have to do this out of necessity rather than preference since all those heaters became expensive and I have a serious interest in showing. In Southern California the temperatures stay high enough that aside from a few weeks every winter my apartment ranges from comfortably warm to hot year round. What does this mean for the guppies?

The tanks on my middle two shelves where I keep fish aged 4-6 mos. can go down to 65 F. This is when I set the thermostat in my apartment for 72° F, and this brings the water up to a more acceptable 68-69° F. This may not sound acceptable but you never know until you have acclimated your fish to it, or some fry are born and raised in water. This could probably go even cooler but then I'm usually uncomfortably cold in my apartment. One may wonder if this could stunt the fish, but I haven't had a decline in the numbers I send to shows, and the fish reach full size, even early. More on this later.

My breeders and newborns on the top shelf live mellow lives in the 70's and 80's, depending on season. This means gestations of 5-6 weeks, slower growth, and patience. Occasionally, I put heaters in these tanks if I want drops sooner or to give some babies a fast break in growth. This is especially true when I'm developing lines and I want to cram in as many generations per year as possible. Another application of this would be to spread my fish out so that drops born at the same time don't all reach show size during the same month. I have also divided large drops and raised half heated to 80° for 6 weeks and kept the rest at room temperature so I wouldn't burn all my fish out with one or two shows left to go.

The bottom shelf can get COLD. At first, I thought that the show males I kept down there would clamp and die, but they have been disease free since I've started keeping them "unplugged." Maybe the lower temperatures don't allow disease organisms to multiply quickly enough on uneaten food and on the fish to lead to disease. Though clamping and ich seem likely, I have never seen ich on my fish and only when I get fish from other breeders and acclimate them so quickly to my conditions, do they clamp. It takes a few weeks of gradually lowering the temperature on a fish to properly acclimate them.

There are advantages to keeping my fish so cool. In short, lower temperature means slower metabolism, less daily feedings, less water changing, less work. Slower metabolism also means fish live longer. For the first time, I am able to keep my fish satisfied with the small number of feedings allowed by my school/work schedule. Keeping them before at higher temperatures with the same feeding schedule kept my fish satisfied for maybe half the day but they would go hungry the rest of the day. Feedings must match or exceed metabolic demands to get optimum growth. Finally, I get lower electric bills now.

The obvious disadvantages are slow growth, longer waits between drops, and less breeding activity. A suspected but unverified disadvantage is much lighter in the finnage of solid color strains. I have raised blue/green colors and blue/black AOC's both warm and cold and have seen no differences in coloration. Of course, during the summers my home is extremely hot and I'm feeding and changing water as much as all of you. ■

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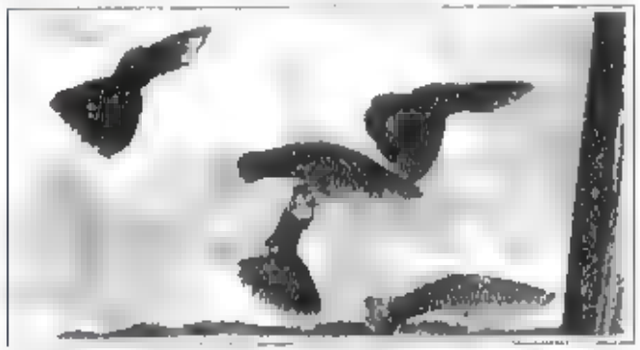
Continued from page 7

bulb socket our lets can handle up to 700 watts per double outlet. By using several multiple socket outlet adapters, you can run up to 20 powerheads or more and still use the same electricity as a 100 watt light bulb. The system will not be over loaded.

Another advantage to the powerhead assisted filtration is that you will notice little or no waste collecting on the glass bottom of your bare bottom tanks. This is a big plus when you have large dams or very tall guppies who like to occasionally rest on the bottom with their tails in the waste. It will drastically cut down on tail rot and disease caused by fish feeding on their feces. I have found this filtration most practical for my tanks of young grow out show males. You can double the fish per gallon and not be over crowded. They will still put on good size for show and due to increased currents, it will keep them swimming and well exercised, developing strong thick caudal peduncles and increasing appetite. Try it, you will see some difference in your guppies. ■



PPGA'S BEEF HEART FORMULA

Ever wonder how the members of the PPGA raise such big fish? We don't have any great secrets. We start with the best stock, bleach our tanks on a regular basis and feed beef heart daily until our fish are 3 months old. The formula is simple to prepare. Beef heart can be found at most supermarkets or from a butcher shop. Remove all fat and veins from the beef heart and grind very fine. Add several large fresh shrimp or if not available, canned will do. To this mixture add a little spirulina powder and liquid baby vitamins. Mix until it resembles thick peanut butter. Use large freezer bags and spread real thin. To feed, break small pieces off the cake and drop directly into the tank. Feed brine shrimp in the morning, beef heart at 9 or 6 and brine shrimp at 9 pm and as many dry foods as possible and you will be surprised at how large your fish can really get. ■

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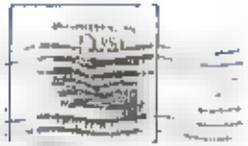

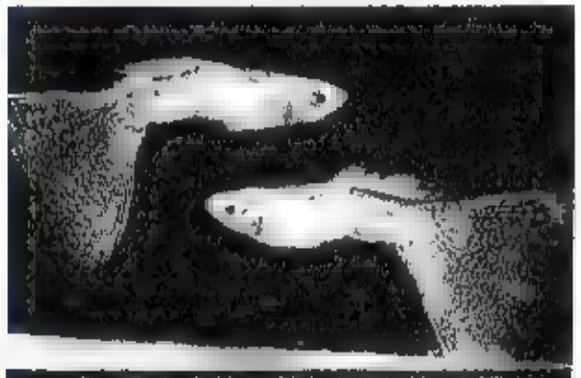

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[illegible] guppy [illegible]

[illegible] Roundtable [illegible] Guppy Roundtable [illegible] issue of Guppy Roundtable.

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GUPPY ROUNDTABLE
THE OFFICIAL MONTHLY PUBLICATION OF THE
PAN PACIFIC GUPPY ASSOCIATION

Pan Pacific Guppy Association
Founded 1967

VOL. V ISSUE IV APRIL 95

SNAKESKINS UNLIMITED - PART I

By Jan Anderson DVM

Photo Credit : D. Wexler PPGA 1993 1st Place SSVT

The snakeskin body pattern is truly one of the more beautiful and genetically interesting inheritance patterns found in the guppy. The snakeskin is defined as a continuous chainlink or a rosette pattern in the body of the fish. Variegated snakeskins may have this pattern continue into the dorsal and caudal fin. These may have dots, streaks or lines in the caudal. These are sometimes called coarse pattern or "Bader" type snakes. Coarse patterned snakeskins usually carry vertical bar markings in the caudal peduncle region.

Lace snakeskins are a beautiful fish. They have a fine chain link pattern throughout the body, caudal, and dorsal fin. The females of this line have little or no coloration in the caudal fin. This line of guppies tends to be slower maturing and not as large as their coarse patterned counterparts. I have only seen the lace pattern in [illegible] and a light purple pattern. Breeders of coarse patterned snakeskins endeavor to eliminate the [illegible] bars from the tail and to produce a fish with a more complete snakeskin pattern. [illegible] series of variegated coarse patterned snakeskins and have [illegible] at every instance. [illegible] you will get any of the patterned [illegible]

By selecting the lace patterned males and breeding them to their sisters you can begin to set or purify the line. Constant inbreeding of lace patterned fish for many generations [illegible] vigor and fertility. Outcrossing them to the related coarse patterned [illegible] generations [illegible] vigor and fertility [illegible].

Lace patterned snakeskins have a few breeding weaknesses that need to be intentionally avoided. The caudal fin development tends to be short of the 1:1 body to caudal length IFGA standard. The finnage tends to get thin, almost transparent if the fish are too inbred. Continual [illegible] tends to produce a smaller fish more quickly than [illegible] patterned snakes or other lines of guppies. The dorsal fin frequently is small and too short.

Next month I'll discuss the inheritance patterns of the snakeskin trait. ■

IMPORTANT MEETING NOTICE
BOWL SHOW & AUCTION

SATURDAY, JULY 28TH
4:30 PM

COVINA LANES
879 S. GLENDORA AVENUE
WEST COVINA, CA 91789

In This Issue.

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MAILING FISH TO SHOWS AND FRIENDS

By Elaine Poy

This is a step-by-step description of how I prepare fish for mailing. I hope to show how easy it is and get more people showing. Shipping is the only way for some breeders to win an annual award in a color class. It may not be feasible to drive entries to every show. So how is it done?

First I refrain from feeding for 24 hours prior to bagging so the fish will not foul their water excessively with waste. I then gather my materials: mailing box of appropriate size, sheet styrofoam from the hardware store, permanent marker, rubber bands, 4x12 or 4x10 plastic bags, plastic cup or other small container. What I do is fill the case for a small box (I use half water with tank water or fresh aged water, I prefer this as it is a little less than 1/2 cup) and add one drop of Amquel for my peace of mind.

Net one (1) fish in the measured water. Pour fish into 4x10 or 4x12 bag. If you use the 4x10's, you have to catch some air, then rubber band the bag shut. If you have 4x12's, you can simply catch air and knot the bag at the end. In any case, you should have 1/2 water and 1/2 air in the bag. The bag shouldn't be too full of air either. You should be able to gently depress the plastic with your finger without stretching the plastic. This allows for the expansion that occurs when the parcel reaches cruising altitude.

Label the bag (either the bag ID # if you're sending to a show, or the birthdate, strain and etc. if you're not) with a permanent marker. Next, put the bag bottom up into another plastic bag (same size as you were using). This way the banded or knotted ends are facing opposite directions and this eliminates the corners where the guppy can get stuck and die.

When you're done, prepare the box. Lining the box with cut sheet styrofoam (available at the hardware store) is optional in warm weather, but a must when it is cooler. Sometimes a styro container can be nested in a cardboard box instead. Put the bags of fish in horizontally, then fill remaining space with loosely crumpled newspaper or air-filled plastic bags.

When shipping to a show, you should include the following: completed entry form in duplicate, entry fee and postage, mailing labels and fresh bags and rubber bands for the return trip. Use mailing tape to seal the box. Write "LIVE FISH KEEP COOL" if shipping in the hot months on all sides with the permanent marker. Take the parcel to the post office. Avoid sending on Thursday-Saturday if using Priority, and on Saturday if using Express Mail. You don't want the fish sitting around any longer than necessary. It's a good idea to give the person on the receiving end a call so they know when to expect the package. ■

WHY I JOINED PAN PACIFIC GUPPY ASSOCIATION

By Darwin Cudex

I live in Fond du Lac, Wisconsin about 90 miles from Milwaukee and belong to Guppy Associates of Milwaukee. One might wonder why I joined Pan Pacific Guppy Association.

Like Pan Pacific's dues structure better. Milwaukee's dues are for the calendar year, Jan. to Dec. only and are the same regardless of the month one joins. Pan Pacific is for a full year.

Pan Pacific has a quality publication, like The Bulletin. The Guppy Roundtable features articles by subscribers. Craig Smith told me that when one subscribes, he or she becomes a corresponding member. Michael Grabowski pointed out in the January - February issue that Pan Pacific is well represented on the show bench. If the breeders continue sharing their knowledge, the quality of the Guppy Roundtable will be stable.

I view both clubs as a logical complement to each other. As a person who has only been raising show fish since September I value the ideas from each. ■

SAN FERNANDO VALLEY GUPPY CLUB SHOW REPORT

By Michael Grabowski

The Spring 1995 show season officially got underway April 1 and 2 in Southern California. The San Fernando Valley Guppy Club hosted the show, with assistance from members of the Pan Pacific Guppy Association. The show, the first for the fairly new San Fernando Valley club, drew nearly 400 entries and judges from around the country. IFGA President, Steven Kwartler, was present, as were Judging Board Chair Paul Gorski, and Parliamentarian Paul Blood. Also judging at the show were Jim Alderson, Frank Chang. Assisting were Mike Khalid, Elaine Foy, Ron Hongo, Craig Smith and Bob Lewis.

While there were a good number of fish that got DQ'd at the show, there were many more fine fish on the bench as well, deserving of the blue, red, green and yellow stickers they received. Many of the winning fish belonged to local club members who made full use of the "home field advantage" by entering more fish than they might normally be able to ship to more distant locations. In fact, all seven PPGA members who showed fish received at least one first or second place award card, and many had multiple winners.

Overall, the show was very good for local club members trying to move up in their classes by showing aggressively. One leading novice member gained enough female class points to currently lead the grand overall female race. Another member has taken the black class by surprise, going from no points to a strong second place in that class in only two shows. Pan Pacific members continue to lead the points in nine classes, including the popular Blue, Blue/Green Bicolor, Pi/B Red, and Solid and Variegated Veil classes. Some members are also maintaining a strong showing in eight additional classes, such as Black, Red Albino and Body/Eye Color Veil. These results emphasize not only the consistency of local breeders in turning out strong fish over a show season, but also the wide diversity of quality fish to be found in local fish rooms. These results also serve as a reminder of the importance of showing as many fish in your chosen class(es) at as many shows as possible. Gains made at this show can be followed by further point gains in the next. If those points can be lost if your fish are not there to earn them. It is also important to show support for other clubs putting on shows in the same way their members support ours, by sending fish to compete with the local fish on the bench as well as sending the entry fees to help cover the expenses of hosting the show. Putting your fish in a box to send to another location is not much more demanding than putting them in a box (or bucket) to drive to a nearby one, and the results can be just as rewarding. The awards point totals indicate that some of the best guppies are found in the fish rooms of Southern California.

Make sure those fish find their way to other show benches around the country as well by sending them out!

IMPORTANT

DON'T MISS JULY MEETING BOWL SHOW & AUCTION

See page 2 for details

SEX AND THE GUPPY

A History of Research by Dick Ainsworth

Reprinted from the August, 1972 issue of the Guppy Roundtable.

Since their discovery in 1866, the guppy has become the most popular fish in the tropical fish hobby. The main reason for this popularity is, of course, the beauty that the modern guppy possesses and the challenge of keeping and improving this beauty.

The modern wide-tail, brilliantly-colored show guppy did not just appear in breeding tanks, but was developed through many years of hard work and patience by many serious hobbyists and academic researchers. This research has by no means reached its limits, but seemingly has accelerated in the past few years. Scientists in the U.S., Great Britain, Germany, France, Denmark, Japan, Canada and throughout the world are very active in guppy research.

A review of this research work can give us a better understanding of our hobby and possibly a few new ideas that we can use in our breeding programs. It is difficult to know what will work or what changes need to be made in our various breeding programs, but the more we understand and know about the guppy, the better our chance to raise bigger and better fish.

THE SEXUAL BEHAVIOR OF THE GUPPY

Some of the earliest works on the sex behavior of the guppy appeared in 1928. Since then many researchers have re-examined these works and have developed new ideas and theories. Before 1928, it was assumed that the male guppy did not have to make contact with the female for insemination to take place. The most common theory of that time was expressed by Schmidt in 1920, who felt that the male had to just get close to the females as if he was using a pea shooter. These gelatinous balls would then attach to the female's genital papilla. The explanation as to why these balls did not dissipate in the water was expressed in 1929 by Vaupel. It was felt that the sperm ball or spermatophore is formed with a compact ring of sperm, their head around the circumference and their tail toward the center of the sphere. As the spermatophore travels through the canals, the heads of the sperm withdraw from the wall and their tails are entwined. This explanation seems to be still valid today.

The first theory suggested that the male had to make contact with the female was by Slepanek in 1928. Slepanek reported that after four years of work, he was convinced that the male not only made contact with the female, but the gonopodium is inserted into the female's duct for several seconds before insemination occurs. He went so far as to say that on the male's gonopodium (third ray) there is a hook, and the female cooperates in the actual insemination by closing over and holding onto the hook with her genital opening. It was shown by Scogin in 1949 that the terminal hook is not necessary for insemination, but the idea that the female was receptive in the insemination stage was first reported by Slepanek. It was believed at that time that there was no cooperation of the female in the mating act. Some researchers and hobbyists even felt that the male had to "sneak up" on the female to complete the act of insemination.

In 1939 another report appeared that gave some indication that the female was receptive to the male advances. This report was by Jiek, who felt that there was a 4-6 day cycle when the female was influenced by a hormone secreted into the water by the male. It was believed that this hormone influenced the female's swimming angle. When the angle changed by about 20° the female was receptive to the male's advances. This report is questionable, and as of yet research has not confirmed these findings.

In 1945 Clark and Aronson ran a series of experiments that showed there must be contact between male and female guppies for insemination to occur. "During 22 observation periods, the females received from 2 to 234 non-contact thrusts without any short or long copulations taking place. None of these females were inseminated. Nine of these were sacrificed 7 to 20 days later and none contained embryos." In this report the non-contact thrust is a thrust where the male's gonopodium comes close to the females genital area but does not touch her. The contact thrust is when the male touches the female lightly with the gonopodium. Short copulations are much like the contact thrust except longer in duration, the short copulations being reported as lasting at least 0.8 seconds and the long copulations averaging 1.3 to 2.4 seconds.

It was also shown by Clark & Aronson (1951) that the female does not have to be with the male 3-4 days as stated by

continued page

HEARTLAND REPORT AND POINTS UPDATE

by Michael [illegible]

O[illegible] [illegible] [illegible] [illegible]

[illegible] 1-4 slots. This includes 26 [illegible] place entries (winning nearly 40% of the categories) [illegible] which went on to take Best of Show placings.

[illegible] place entries, one Best of Show and one 3rd place Best of Show.

[illegible]

With points picked up at this show, the [illegible], as a group, continues to dominate the class points competition. Eight of the 22 Delta/Tank color classes are currently led by club members, in a few cases by enough points to guarantee a victory in that class. Further, we have three members showing a strong second place, and several more [illegible] in the [illegible] place [illegible] the club is somewhat weaker overall, with [illegible] member leading [illegible] Male [illegible] Female [illegible] [illegible] member [illegible] Grand Overall Female, as well as taking a [illegible]

[illegible]

Finally, good luck to every one [illegible] ■

FOLLOW THOSE GENES

By [illegible]

[illegible] or change the shade of a color [illegible] fish you will have far more [illegible] ■

[illegible] The experiment [illegible] female [illegible] had never been in water containing males [illegible] Some [illegible] within [illegible] seem, therefore, that the male does not secrete any type of hormone into the water [illegible]

Another interesting test by Clark & Aronson was the [illegible] it was found that [illegible] appeared to have [illegible] one week [illegible]

[illegible] technique developed by [illegible] Clark [illegible] Aronson and Myron Gordon [illegible] that in all [illegible]

Another theory was that the male had to [illegible]

The male's courtship performances can be [illegible] reviewed here:

The male swings [illegible] travel from the male to the female.

3. Thrusting of the gonopodium
4. The male's body seems to form the an S-curve. At this point the [illegible] of the [illegible]
4. The quivering of the body
5. The mating attempt

Now that we have covered some of the mechanics of the mating act [illegible] to provide some of the factors that cause the mating attempts. Several factors that seem to regulate the male's mating attempts are:

1. The larger females induce more vigorous mating attempts in the male than do small females.
2. Pursuit of the female tends to be [illegible] vigorous shortly after females have delivered young.
3. The longer the period that the male has been separated from a female, the more vigorous the mating attempt.
4. Males tend to be [illegible] towards [illegible] females with which they cannot mate.
5. The males' original development of sexual [illegible] depends upon learning [illegible] through behavior [illegible] female's [illegible]

The female is seemingly [illegible] presence of a suitable male."

[illegible]

Cont. on page 9

BRINE SHRIMP FOR THE SMALL AQUARIUM SET-UP

By Bobby Joe Bean, Jr

One of the first problems all beginning guppy breeders have is raising baby brine shrimp. As every true guppy breeder knows, in order to have the cutest fish you must feed baby brine shrimp on a daily basis.

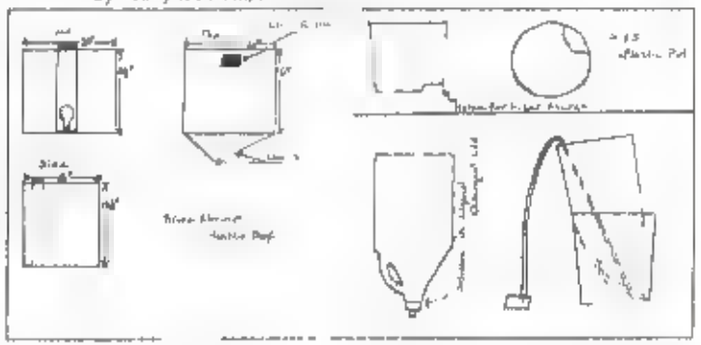
Most beginners start out with just a few tanks with heaters in them and are unable to raise brine shrimp in their fish rooms. I've heard of a few different ways to raise brine shrimp without a heated fish room such as: placing 2 1 gallon jars in a heated 5 gallon aquarium or dropping a 25 watt submersible heater in a 5 gallon water container. My solution to the problem was building a heater box that would hold 2 1 gallon plastic containers.

The reason I prefer this to the others is, because if I had a heated 5 gallon aquarium I would want to use it for my fish and since I only have a few aquariums, a 5 gallon drum is too large. With 25 tanks, 2 1 gallon plastic containers will supply me with enough brine shrimp for two feedings a day.

In order to build your heater box, you will need the following:

1. Box (see diagram for measurements
2. 2 plastic pots
3. 2 1 gallon plastic containers
4. 2 liquid detergent pop tops
5. Scissors
6. 1 - 10 gallon aquarium light source
7. 1 pump and tubing (soft & rigid)

First you will need to construct the box to the specified size with two doors that open in front, set the top. Install the 10 gallon light source near the back of the box with light switch down, as shown in diagram. Next you will need to cut a large hole in the bottom of the 1 gallon plastic containers and silicone the detergent pop tops into them. Cut a small section off the bottom of the plastic pots for the light source when harvesting your brine. Now, simply add a 40 watt bulb in your light fixture and your brine shrimp heater box is complete.



Place a quart and a 1/2 gallon mark on the side of your plastic containers; add 2 tablespoons of rock salt per quart of water and the amount of brine shrimp you wish to start with the plastic containers. Next, put the plastic containers in the heater box with the air line dropped into bottom of container and let aerate for 24 hours.

After 24 hours, you can harvest one container and start your second container of brine shrimp. In order to harvest your brine shrimp, simply put the containers and pot out, cover with a towel and a light source by hole on the bottom of pot and wait 5 - 10 minutes. Carefully lift the plastic container up, pop the bottom open over a brine shrimp net and you will have your first harvest of two from this container. Place the plastic container back in the pot and heating box and let aerate for another 12 hours for your second harvest.

Note: Placing a thermometer in the containers initially and with a little trial and error, you will learn how far to keep the doors on your heater box open to maintain a temperature of 75 - 80° F. Using this method you should have enough brine shrimp for two daily feedings. ■

WEST COAST TROPICAL FISH AND GUPPY CLUBS

For FREE listing in the Guppy Roundtable, please mail club name, contact person, address, telephone number and fish interest to the editor.

Sex and the Guppy from page

(oncorhynchus shawytscha). The tests were with hypophysectomized females (pituitary removed, and their gonads intact, and another group which were gonadectomized before hypophysectomy.

The test indicated that there was egg development in hypophysectomized females that were treated with the hormone, while the females not treated evidenced egg regression. The sexual responses were not as clear cut, but there were some receptiveness in females that were hormone treated. The overall results seem to indicate that the pituitary gonadotropin alone does not regulate the female's sexual behavior, but works with the ovarian hormone.

As stated by the researchers, "Perhaps the supposed ovarian hormone is directly involved in the regulating of the excitability of the sensorimotor mechanism underlying the sexual response. Whereas the gonadotropic is involved in maintaining a certain physiological state against which the ovarian hormone exerts its effect. Either of these hormonal events may influence the threshold at which the female responds to stimuli provided by male courtship." ■

Reprinted from "The Guppy Forum" June 1972. Publ. by Houston Guppy Club.)

MEASURING SALT ACCURATELY

By Christian Szot

Two ways of measurement are by volume and weight, the two being totally different from each other. When weighting out an amount of something, you are always sure of having the same amount, e.g. 100 lbs. of solid ice plus 100 lbs. of snow equals 200 lbs. of frozen water. Measurements by volume, however, is very deceiving, e.g. 100 bushels of solid ice will yield much more water than 100 bushels of snow. In conclusion, measuring the same amount of material each time, especially when the substance is in a different form and salt comes in forms from a coarse rock salt to a refined table salt.

Here is a table showing some of the different types of salt available and each type's volume by weight.

TYPE OF SALT	WEIGHT	VOLUME
Sea Salt	66 grams or 5-3/4 oz	160 ml, or 9 level Tbsp.
Morton's medium flake salt	60 grams or 5-3/4 oz	240 ml, of 5 level Tbsp.
Morton's rock salt for water softeners	60 grams or 5-3/4 oz	140 ml. of 8 level Tbsp.
Morton's tissue (a flake salt)	60 grams or 5-3/4 oz	260 ml, or 15-1/2 level Tbsp
Nugget brand granulated salt	160 grams or 5-3/4 oz	130 ml or 7 level Tbsp.

For brine shrimp. Have you ever read the instructions on the different labels of the various brands or in books and found all the seemingly different amounts of salt to add to the brine? Some say 6 tablespoons, some say 8 and still others a half cup of refined salt, etc. It is enough to drive you up a wall, especially when you find out that they are all correct. The only difference being that each of the instructions use a different type of salt, e.g. rock, crystal, granulated, flake, etc. The volumes differed greatly but not the weight. Using Sanders Longlife brand, the magic numbers seem to be 160-165 grams or 5-3/4 to 6 oz. of salt.

When you get your salt, no matter what type it is, weigh out the proper amount, dump it into a convenient container, put a mark at the top of the salt and you have a handy measurer. You no longer need to weight out the salt as long as you stay with the same type of salt. I make it a practice to weigh out the proper amount with every new bag I buy. ■

(Condensed from article in S.E.A.S. "Gill Gazette" Oct. 1971.)

CIGARETTES AND THE GUPPY

By Alex Baptsch, Berlin, Germany
(Translated by Albert J. Klee)

Has any reader ever seen a guppy smoking a cigarette? I know I haven't. The guppy may not know of the damage that tobacco smoke can do to its system but I do. Ironically, in spite of this knowledge of the dangers of nicotine [illegible] smoke. However, for the guppy, thousands have been swept away by nicotine poisoning. But can it be that the guppy is nonsmoker still dies of nicotine poisoning? The answer is, most assuredly, "yes" and we are obliged to take care of our smoking habits around our fish.

The question of whether or not tobacco smoke or gases contained harmful ingredients that can exert dangerous influences upon aquarium fish has been a well discussed one. As a matter of fact, it was because of the existence of aquarists that such attention was drawn to the inhabitants of our aquaria in the first place. Among things dangerous to fish, smoke from cigarettes, cigars and pipes are dated time and time again.

Besides nicotine in tobacco smoke, we find resins, resinous acids, nitrogen carbon dioxide, carbon monoxide, sulfuric acid, prussic acid, ammonia and other materials. Our lungs can withstand these in moderate doses for quite awhile, the guppy cannot. For over 100 years now, it has been known that the toxicity of nicotine is increased in alkaline waters (the type of water guppies are usually kept in). It is decreased in acid waters. The scientists, Schuster and Wolden, have made especially penetrating studies on the effect of nicotine on aquarium fish. In numerous experiments they demonstrated that a concentration of .10 mg/1 (milligrams per liter) of nicotine could kill full grown guppies within 5 minutes. Four day old fish died within two minutes. A 3 to 5 mg/1 dose had a deadly effect within 20 to 60 minutes. Along with these findings, it was learned that male guppies had somewhat poorer resistance to nicotine than did the females.

Even mild nicotine poisoning reduces the capacity to deliver full litters and in addition, subsequent stripping and birth defect among the young are common. For example, the average number of young born to guppies in water containing a nicotine concentration of 1.5 mg/1 was only 15, contrasted to the 84 of guppies not under the influence of this chemical.

It was also demonstrated that when a tobacco smoke atmosphere was maintained over the aquarium water surface, the first signs of poisoning occurred within 70 minutes. The smoking lounge is therefore not the proper place for guppies!

When the water was aerated with air saturated with tobacco smoke, the fish began to show signs of disturbance within three to five minutes. They began to make short, wild circular dashes with indications of stiffening pectoral fins. Ultimately, their sense of equilibrium was destroyed, muscles became paralyzed and the fish began to sink to the bottom. A rhythmic movement was resumed, but it became less and less regular and the fish began to swim backwards.

Strange to say, the heartbeat continued after breathing had ceased, even though the heartbeat and breathing are related under normal circumstances.

Fortunately nicotine is quickly broken down and removed from the water. In spite of this, if we smoke in the vicinity of the aquarium [illegible] the inhabitants are in imminent danger and/or chronic nicotine poisoning.

So then, one cigarette less for your guppies. They don't smoke and the more have never learned about the dangers of nicotine. It goes without saying also, that fish other than guppies do not enjoy nicotine or tobacco smoke either. ■

(Reprinted from "Aquarium" October, 1968

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AQUARIUM LEAKS

(Reprinted from "Of Fins and Things", Bronx, NY)

One common area of discouragement to the hobbyist is a leaking tank. The bond that provides for the creation of a leak proof tank is formed by a combination of cement, metal and glass. Here the cement has a heavy responsibility, for it should pull away from either the glass or the metal, a leak results. Unfortunately, many of us create circumstances that lead to this condition. For example, leaks may be caused by

1) Lifting a tank while it is full of water
2) Pressing too hard on the outside of the glass while the tank is empty
3) Maintaining a tank on an uneven surface
4) Allowing the cement to dry out during storage

You can prevent these leaks by

1) Never lift a tank full of water. It is safer to empty it, or drain all but a few inches before moving the tank
2) Clean the outside glass only when the tank is full of water
3) When in doubt about the level of any surface, a piece of 1/2 or 3/4 inch plywood can be cut to fit under the tank to provide an even support
4) When storing tanks, keep some water in them and use a tight fitting cover (kitchen plastic wrap). The moisture formed will prevent the cement from drying out

When a tanks leaks it must be emptied and repaired from inside. Exterior methods are usually worthless. Make sure that the tank is completely dry and clean of any grit, dirt and gravel. Apply a coat of silicone aquarium cement on all inside joints and allow to dry. ■

I wonder if there'll ever be,
A place for real aquatory
Between the "creature" known as wife
And a guppy lover a goal in life

The noble guppy earns 1st place
And I come second in the race
I can't be such a gorgeous dish
Cause I'm second fiddle to a fish.

He uses everything in sight
To make things work - to make them right
For my rivals, and I sometimes wish
That I was just a fish

A trophy seems to be the thing
a rosette or a card to bring,
to me aunie I sit home and fret
The up and coming of his breed

I've just described my plight in life
I'm a guppy lover's wife
But if you love him you must share it
And laugh and try to grin and bear it

By Lois Robinson

Reprinted from "Rogues Tales" Aug. 1972.

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GUPPY ROUNDTABLE

THE OFFICIAL BIMONTHLY PUBLICATION OF THE
PAN PACIFIC GUPPY ASSOCIATION

VOL. V ISSUE IV — MAY 95

DO BRINE SHRIMP CARRY DISEASE?

By Mary & Dan Canon

Recently, we have seen several articles which have suggested that feeding a lot of newly hatched brine shrimp can cause several problems in raising fish. One article mentioned that the baby brine shrimp "carried" the velvet disease, Oodinium, into tanks of baby betta.

Another article dealt with the small white worm, White body malady, to which female guppies are especially susceptible. It is supposed especially clean up when the amount of brine shrimp being fed was reduced.

A third article revealed that insecticides such as DDT were found to be present in the salt water where brine shrimp eggs are collected. It reported that Utah eggs show a heavier concentration of DDT than San Francisco eggs and that there is some evidence that the level of DDT in the Utah eggs can be harmful.

We use the Utah eggs because they are cheaper and our feeding regimen for young fish has been alternating copious servings of baby brine shrimp with equally copious feedings of microworms. This, coupled with frequent partial water changes gives us the best early growth that we have been able to achieve with fry in their first few weeks of life.

So we are reluctant to discontinue the use of brine shrimp even in the face of these articles and the fact that we have seen some outbreaks of Oodinium on both baby gouramis and betas and we have had some problem with the white body malady on our female guppies.

Our thinking on this subject was greatly influenced by the experiences of two friends, both of whom are proficient at [illegible] tropical fish breeding. [illegible] years ago, one of these men was contending with [illegible] problems with his young guppies. At [illegible] medications [illegible] he finally started [illegible] source of the problem.

He had been using the brine in which he hatched his brine shrimp eggs and in an experiment began to make up a fresh solution for each batch. When he did this, his epidemic disappeared!

The reusing of the hatching brine is recommended by many on the grounds that better hatches are obtained water that has been used several times. There is probably some validity to this claim. Certain brine eggs can be induced to hatch by the introduction of some bacteria which apparently break down the shell of the egg to the advantage of the enclosed fry. A bacteria buildup in the brine solution could very well act in a similar way on the brine shrimp eggs.

Cont. on page 7

In This Issue...

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FILTERS

By Craig Smith

This subject has been written about many times and I hope will be written about many times in the future. This is one of the most important items in our fish rooms. In order to be able to raise good fish you are going to have to use a filtration system of some sort. Obviously some thought should be given before you decide on one type or another. One needs to sit down and determine what his requirements are, and how much time they are able to spend maintaining them. Regardless of what some manufacturers claim, all filters do require some form of maintenance. You also need to make as many water changes as you can.

I use two different types of filters. I think that almost all filters are good, but some are better suited for certain purposes. All of my tanks are bare bottom which makes me prefer gravel or gravel harbors the debris and bacterial which filter has a detrimental effect on my mollies. Guppies will occasionally use a power filter on my 10 gallon tank, and never do my mollies. These are good filters, but you have to weigh your water to see if it is worth.

The first filter I use is a box filter, either Lustar or Hagen. I like the square in lieu of the corner. I don't like to use the type that utilizes air diffusers. I find that they clog a lot and need replacing and this gets expensive in a large set up. Marbles are used to weigh the filters down and floss is placed on top. When I set up a new tank I use some of the old floss to seed the new filter. The plastic box filter is also easier to bleach. I use the floss until it gets a glossy sheen to it and then replace it. My box filters are used without bells to allow the fish to feed on the floss and to keep mollies from resting on the bell, thus eliminating a possible tail rot problem.

The second filter that I use is a sponge filter. Marvel makes some very good ones and the new Hydro-Sponge filters are great for large tanks. If you are ambitious you can make your own. They can be about equal. Regardless of what filter you decide to take with sponge filters, there are some things that you need to be aware of. The first is that sponges should not be cleaned in bleach for more than 10 minutes at a time. Bleach causes sponges to break down and rot together thus closing up the pores that are needed to absorb dirt, gases, etc. If you leave it in bleach over night you will find a much smaller sponge in the morning. Bleach can be neutralized by using sodium thiosulfate and allowing the sponges to soak for 10 minutes. Another method to clean sponges is to use your washer using one cup of bleach per load on the hot cycle and use them thru the rinse cycle twice. Sponges are really cheap. If you have a disease problem, throw the sponge away. I find this to be one of the major drawbacks to sponge filters and with the exception of fry tanks, rarely use the sponge filter. I like to use a box filter in conjunction with them. The box filter will pick up some of the larger particles of dirt in the tank which a sponge obviously can't get. ■

STRAINS AND LINES

By Elaine Poy

Recently [illegible] explain [illegible] to explain, to the best of my ability, these two terms.

A strain is usually the different color varieties of guppies: blues, purples, reds, lib pastels, etc. We refer to a line to designate the origin of a particular green, for example, because not all greens have the same genetics behind them. If a green pops out with your normally true-breeding reds and you purify it through generations of breeding into a true-breeding green, you have created your own line of greens.

You can even create your own line by carefully breeding far from an established line which have a different hue, or maybe spots in the tail if bicolors are desired. On the other hand, you may even create a totally new strain that way too, though probably more often than not, some hybridizing is involved to come up with a totally new color like hot pink. By groundwork and, you can explore what is meant by inbreeding or line breeding. ■

THE ROLL OF BLEACH IN THE FISH ROOM

By [illegible]

A few years ago a [illegible] disease was [illegible] fish [illegible]. It was [illegible] tried every [illegible] that could find to stop [illegible] worked [illegible] brew [illegible] somewhere [illegible] knowledge [illegible] episode [illegible] hospital [illegible] every [illegible] bleach.

[illegible] that chlorine has no business around fish. Chlorine bleach does a great job of oxidizing [illegible] bacteria, proteins, viruses, algae and high organisms like [illegible] fish [illegible] good [illegible] without [illegible] Pr[illegible] good soak [illegible]

When ... bleach

[illegible] cure, you can bleach the tank and destroy the fish at the same time. This will most likely protect the rest of your [illegible]

[illegible] tanks and [illegible] bleach [illegible] of fish [illegible] tanks [illegible] Bleach [illegible] gallons [illegible] Then fill the tank [illegible] way [illegible] Make sure [illegible] thoroughly with the bleach [illegible] solution. After [illegible] tank [illegible] and rinse [illegible] roughly. Extra dechlorinator can be added, too. I usually bleach the old box filter, if I decide not to transfer it when I move the old inhabitants. The bleach [illegible]

AQUARIST'S NOTEBOOK

By Ed Stansbury

Submitted by Craig Smith and reprinted from an unknown magazine.

BREEDING FOR IMPROVEMENTS

One [illegible] consistent, high quality young generation after generation. How [illegible]

[illegible] selecting the best youngsters from a generation [illegible] together [illegible] possible to improve strains this way. [illegible] have a reproductive [illegible] month [illegible] generation to be able to [illegible] Well young [illegible] And now [illegible] evaluate and compare [illegible] month old [illegible] and the ones that are [illegible] dictates that you cannot improve strains this way.

[illegible] your stock, and add to better [illegible] members and national specialty clubs.

Summary of Breeding Strategies

Inbreeding

[illegible] quickly [illegible] but also [illegible] inbreeding [illegible] generation [illegible] natural [illegible] with livebearers impossible with prolific egg layers.

Linebreeding

[illegible] to breed [illegible] mutation [illegible] strains [illegible] breeding.

Outcrossing

[illegible] Each [illegible] to improve [illegible]

No matter which [illegible] they are worthless without [illegible] the [illegible] Also you must [illegible] shape [illegible] hardness [illegible] ■

AQUARIST'S NOTEBOOK

By Ed Stansbury

Submitted by Craig Smith and reprinted from an unknown magazine

Dihybrid Crosses

[illegible] lighter [illegible] are short [illegible] goldfish [illegible] homozygous [illegible] veils because of the [illegible] the dominant genes.

Summary of Genes

[illegible] alleles [illegible] genotypic gametes plus mV and mv genotypic gametes (eggs or sperm). The MMvv parent can only produce Mv gametes.

[illegible] veils, and [illegible] homozygous mv veil marbles.

[illegible]

GUPPIES

Dominant	Recessive
Wild body color	Albino
Wild body color	Albino
[illegible] tail	Pointed
[illegible] tail	Swordtail
[illegible] tail	Veiltail

Lethal Genes

[illegible]

[illegible] in Mollies

[illegible] in Betas

[illegible] ■

	MV	Mv	mV	mv
Mv	MMVv	MMvv	MmVv	Mmvv
Mv	MMVv	MMvv	MmVv	Mmvv
Mv	MMVv	MMvv	MmVv	Mmvv
Mv	MMVv	MMvv	MmVv	Mmvv

THE SIZE AND FREQUENCY OF WATER CHANGES AND HOW IT AFFECTS GUPPIES

Reprinted from Guppy Roundtable February 1973

Are you curious as to just what amount of water to change on your guppies and how often? [illegible] water [illegible] the guppy breeder [illegible] the [illegible] and [illegible] down into solid [illegible]

[illegible] what happens to our guppies when we change a [illegible] of water. [illegible] later. How will such drastic changes affect our guppies.

[illegible] and would not really be practical [illegible] ■

Cont. on page 6

[illegible] #3-73C, etc.) it is important that you specify which subproject you are doing (which type of water you are using to make the changes). We hope that if you have more than two tanks available to devote to this research project, you will set up as many as possible in addition to the control tank using as many of the types of exchange water as you can, each in a separate seal tank, of course.

THE EFFECTS OF EARLY WATER TEMPERATURE CHANGES ON GUPPIES

GOAL: To investigate what effects such minor water changing will have on the growth and development of guppies when using various specific types of water to make the exchanges.

NOTE: BEFORE TO READ THE SPECIFIC PROCEDURES FOR THE PROJECTS before going on to the specific procedures set up for this project in the general introductory outlines all details to be followed except for the specific test details listed below.

TEST PROCEDURES FOR GUPPY #3-73 SERIES RESEARCH PROJECTS

A. TANK SETUP: two 5 gallon tanks are suggested for this project, however, it is perfectly acceptable to use 10's or 5's as long as you have an adequate supply of the type of refill water you are using to make the daily water changes. Tank A will be the test tank and Tank B is the control tank in all cases. Select the type water you wish to use:

#3-73A: Raw water straight from the tap and adjusted to the proper temperature by mixing hot and cold tap water.

#3-73B: Raw water aged 24 hours and brought up to proper temperature by room temperature or dry dechlorinator. Nothing added.

#3-73C: Aged water in which snails are living. Water should be aged in a container twice the size of your test tank. (cheap plastic containers work fine) so that the same amount is never used in one exchange. Add two discrete mystery snails per each 10 gallons for 5 gallon tanks. You'll have to feed these enough food to live on, but lightly enough so there is no residual food in the water. When using the water for exchanges avoid getting any snail droppings into the guppy tank. Once a week siphon the debris from the container removing exactly one gallon of water. Refill the tank daily after making the water exchange in your test tank. Remove all the snails (easiest done when siphoning) if your population returns at the specified level.

#3-73D: Aged water in which plants are living. Again, use a container twice as large as your test tank for aging the water. Place a healthy sample of Cryptocoryne in a nine pint plastic cottage cheese container or other plastic container of about the same size (using a pot of planting mix topped with gravel). Cryptocoryne is an ideal plant as it will tolerate many lighting conditions and requires fresh water. After making sure the water received for a day's water exchange in the test tank, refill the container with aged water in which both plants and snails are living. Continue C & D. This will need food for the snails and weekly siphoning of dead snails under.

NOTE: While subprojects C through F requires slightly more labor, we hope some of you will select these as there are indications that they are more effective in a least one respect. We will tell you why now so it is better to make your own observations than to start with preconceived notions.

Now that you have selected what type of water you will use, measure exactly gallons (gallons for [illegible] gallon tanks, 15 gallon for 15 gallon tank). Pour into completely empty Test Tank A and use a permanent marking pen to mark the level on the front glass. This is the mark you will siphon down to daily. Now fill both tanks with the selected type of water and mark the top water level of both with the marking pen. This is your refill line. Refer to the general instructions for filters [illegible] sub-tank filters [illegible] plants or scavengers.

C. FISH: Divide 1 liter of guppies [illegible] into two equal groups. See general instructions [illegible] division does not allow an even 5 fry per tank? None fare no worse than you recall.

D. FEEDING: There are no special feeding instructions for this project as use any food(s) you normally use, but incubate it [illegible] carefully so that each tank gets exactly the same amount and kind of food (see general instructions). Careful measuring is important to the results of this [illegible].

E. RESULTS: Fill out the scorecards with the pertinent information as specified under the general instructions. Keep these cards handy for frequent notes or observations.

F. BEGINNING TIPS: Make sure you have an adequate supply of which ever type of water you are testing. The general project is numbered #3-73, but it is vital that you make note of the subproject (initial numbering which type of water you have used in the test. Also please make note of the pH, hardness and any use of your water (from your local water company).

START TEST: Control tank B will receive no water change but should be kept topped up to the water level line with whatever you are using in this test.

DAILY: From Test Tank A siphon off water and debris down to the lower mark on the tank. Refill to top mark from your water source. Keep all other factors as identical in Tanks A and B as possible. EVERY TWO WEEKS: change the filter medium in both tanks (on the same day and using equal amounts of refills). ■

Carry Disease from cover

However, it is also possible to experiment with the hatching solution and length of time needed for the hatch until a combination is struck which gives close to 100% hatch with a fresh solution. So, the "old water" method is of doubtful benefit.

More recently, our second angel fish breeding friend began losing whole spawns to what appeared to be some kind of internal infection. He tried the route of many medications, to no avail. We told him about the experience of the first friend. This second breeder was not reusing the brine solution but he did make a practice of transferring unhatched eggs from the hatch being harvested to the next hatch. As an experiment he discontinued this and reported noticeable decrease in the number of losses.

Like most freshwater aquarists, we have always thought of salt water as being antiseptic. After all, we regularly use salt in the treatment of diseases, and we wash tanks with salt water to sterilize them. But in thinking about the two experiences of those angel fish breeders, it occurred to us that perhaps this attitude toward salt water was making us careless about the cleanliness of our brine shrimp hatchery.

Since *Gadinium* is a condition disease of many marine fish, obviously some species of this parasite can live in salt water. It would also follow that bacteria and viruses can adapt to salt water. It occurred to us that we might be unintentionally culturing some pretty virulent strains of various of microorganisms along with the brine shrimp we were hatching.

So, we set up two procedures in connection with our hatching of brine shrimp. The first is simply to mix fresh salt solution for every single hatch. The second is a complete weekly sterilization of everything used in connection with the hatching of the shrimp. In addition to the hatching containers, for this includes a strainer and air tubing, siphon hoses, syringes used for feeding, jars and nets. Our procedure is to soak them all in a strong solution of household bleach neutralized with Sodium Thiosulfate and rinse thoroughly. This is the same procedure we use to clean filters.

Since we have been following these procedures, the outbreaks of *Gadinium* have been reduced to zero. Our problem with the white body has never been serious and at this writing we cannot document any improvement here. But we would like to offer another idea to think about.

Feeding newly hatched brine shrimp has been a common practice among guppy breeders for many years. To our knowledge, however, the white body malady has appeared only in the last two or three years. Is possible that the appearance of this malady coincides with the rising level of DDT concentrations in the seas? If there is a relationship here, is the first evidence we have seen of damage to the brine shrimp supply by DDT. We would like to add our voices to those who are crying out for the banning of DDT, before we not only ruin our brine shrimp supply, but the rest of our environment as well. ■

(Reprinted from Modern Aquarium October 1970.)

CLASSIFIED ADS

[illegible] Greens, Halfblack, AOC's, Halfblack Blues, Reds, Variegated Snakes
Len Anderson, 20935 Golden Spring Dr.
Diamond Bar, CA 9[illegible] 789

[illegible] Blues, HB AOC's, Greens, Purples, HB Reds, Red Albino's, Reds, Solid & variegated Snakes, [illegible]
Frank Chang, 22855 Hickory Hills Rd
Yorba Linda, CA 92687 (714) 692-[illegible]92

Blue-Green, Bi-Colors
Diane Poy
3100 E. Yorba Linda Blvd #B19
Fullerton, CA 92631 (714) 528-3275

Reds, Blues, Purples, AOC's, HB Blues, Red Bi-Color AOC's, Solid and Variegated Snakes
Craig Smith, 2701 Carriage
Bakersfield, CA 933[illegible] 2 805 589-9[illegible]2

Golds, HB Reds, HB AOC's, HB Pastels, Angels, Albino Cory Catfish
Mike Khaid, 16651 Parthenia Street
North Hills, CA 91343 818/892-2436

The Editorial Staff apologizes for the long delay in publishing this issue. A strong sustained effort is being made to complete the outstanding issues for June, July and August '95.

Thank you

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GUPPY ROUNDTABLE

YOUR GUIDE TO SUCCESSFUL GUPPY BREEDING

- If you are thinking of breeding guppies, [illegible] how to choose the right equipment
- What [illegible] you need to know about equipment, [illegible]
- Are you [illegible] the area of disease [illegible] breeding of guppy breeding

[illegible] Guppy Roundtable is going [illegible] improving [illegible] different types of filtration system [illegible] of which [illegible] most successful guppy breeders use, and more.

[illegible] to describe [illegible] of guppy breeding.

The official publication of the Pan Pacific Guppy Association, Guppy Roundtable is published monthly including an annual double issue in December. Every issue of Guppy Roundtable includes articles and information on all aspects of guppy breeding. You will also find articles from guppy breeders in the United States and abroad. You will learn from experts in all aspects of guppy breeding. You will gain more knowledge and pleasure from your guppies with your very first issue of Guppy Roundtable.

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GUPPY ROUNDTABLE
THE OFFICIAL MONTHLY PUBLICATION OF THE
PAN PACIFIC GUPPY ASSOCIATION

VOL. V ISSUE IV JUNE 95

FINAL ISSUE
To All Subscribers

This is the last issue of The Guppy Roundtable. The Pan Pacific Guppy Association has decided to cancel its publication of this newsletter due to the various difficulties involved with publishing it on a regular basis, not the least of which is the time taken away from our fish rooms in order to produce a newsletter. All current subscribers will soon receive a pro-rated refund for the remaining issues of their 11 issue subscription. At this time we are no longer accepting money for new subscriptions, back issues, or bound editions of previous volumes. All monies received for such purposes will be returned unclashed.

Please note that the club itself is still operating. We will still be hosting the IFGA Annual at the Claremont Inn in Claremont, CA, on November 3-5. You are all invited to come for the judging seminar on Friday, or the auction on Sunday. We will also continue to meet the first Sunday of each month at Carl's Jr., 3240 E. Yorba Linda Blvd., Fullerton, for discussions, mini-exhibitions and auctions.

The PPGA thanks everyone who subscribed to this volume of the Roundtable and apologize for any disappointment caused by its cancellation. We look forward to seeing you at the show!

CHOOSING THE RIGHT FEMALE

By Brian Chin

Most guppy breeders quickly realize how important it is to choose the correct females for breeding. Even if you pick the best male and you breed it to a female that carries bad characteristics, you will see a fast decline of the quality of your strain. Although I strongly believe that a good basic understanding of genetics will assist a guppy breeder in understanding how to choose the right guppy, there is a visual way that can be used.

Many features are hidden in the female due to the lack of male hormones. So how can a guppy breeder tell the difference? One way is to use your ability of observation and keeping records of your results. To further explain this, let's take an example. Brood of babies resulting from a female bred to a single male. Observe the shape, size and color of the female body and finnage. Make a note of this and keep a record.

Cont. on page 5

In This Issue. . .

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BRINE SHRIMP

Troubles, Trials, Triumph?

By Michael Grabowski and Elaine Poy

Unless you've been raising your guppies to be vegetarians, you've noticed that the price of brine shrimp eggs has skyrocketed since the start of the year. A one pound can of the best eggs cost as low as $11 only last January, but the price very quickly doubled and tripled this spring and now, if you can find it, a good can might cost $30 or more. The dramatic upsurge in price is attributed to a poor harvest of the eggs last fall, combined with a large increase in global demand for them. What will happen next year is anyone's guess.

The guppy breeder has a problem, now, due to this situation. Baby brine shrimp is probably the most important food you can feed your guppies during their first months alive. It helps get them up to size better than any other regular food, and is one of the few foods that is small enough to feed to newborn fry. Beef heart paste has been proposed as an alternative to brine shrimp, but keep in mind that the breeders of the PPGA use beef heart and flake foods as important and essential supplements to the guppy diet, not substitutes for brine shrimp. So now with the increase in the cost of the eggs, the breeder must find a way to get the most efficient hatch possible. This would be a hatch which is high in live shrimp and low in unhatched eggs and already dead shrimp. There are several factors to look at when trying to produce the best yield. This article will deal with those factors and how one breeder, Elaine Poy, has attempted to find the right combinations of them to get the best hatches.

Her search for a better hatch actually began in January, when she decided to double the space of her guppy room and the scope of her breeding program. For several years up until then, she had been using a small but adequate brine shrimp hatchery made from a pair of inverted plastic bottles - one 1 liter and one 2 liter bottle. Basically, each bottle hatched one teaspoon of brine shrimp eggs in about 3/4 liter of water with one tablespoon of rock salt. The water was heated to a temperature of 75-78 degrees or so during the cooler seasons and left unheated during the warmer seasons. (Of course, California has only two seasons - the cooler season and the warmer season.) Usually there would be a hatch ready in 24 to 30 hours, sometimes less time when it was really hot. These hatches were fine, feeding all the fish well once a day and leaving a good amount left over to freeze for emergencies.

Obviously, that old hatchery would not be adequate to feed two or three times as many fish, which she soon had once she set up additional breeders, acquired fish for another color class, and allotted some space to me for my own line of fish. When we built our new tank rack, she installed a much larger version of the old setup, in the form of a 5 gallon jug, and began hatching brine shrimp on a larger scale. This new setup is about four times the size of the old one, so she initially quadrupled everything she had been doing before. 4 teaspoons of eggs and 4 tablespoons of salt in a little over two gallons of water. A small, submersible heater was set inside to maintain a 75 degree temperature.

The initial problem that occurred was that 4 teaspoons of eggs per hatch simply wasn't providing enough food for the fish. Allowing more lines and more breeders and fry in the fish room created a much greater demand for the food. Additionally, she probably was not getting quite as good a yield at the time as she needed. Ultimately she began putting 4 tablespoons of eggs in each hatch, rather than 4 teaspoons. She continued with that standard formula for most of the spring: 4 tablespoons of eggs, 4 tablespoons of salt, 2+ gallons of water, allowed to "percolate" for about 24 to 30 hours before feeding.

Cont. on page 7

A MILLION WAYS TO RAISE GREAT GUPPIES

By Jim Alderson

The fact of the matter is there are as many ways to raise great guppies as there are guppy breeders. I attended shows for many years in an effort to glean as much knowledge from experienced breeders as I possibly could. I would read anything I could for just a few ideas I might possibly use in my fishroom. I was convinced the really good stuff was not written down and that there was some sort of sworn secrecy by the top breeders not to let you in on it. After three of four years of showing and only occasionally placing, I began to win a few classes. I finally realized that combining my experience, and all that I had strived to learn, I had developed my own technique for raising show guppies.

Well, the learning process still continues. To my surprise there are many things I have to learn twice, or even three times. I always tell new members to the Pan Pacific Guppy Association, "I have made all the mistakes you have made and probably made them twice." You can incorporate as much or as little of what you read and hear into your hobby as you like.

Having said that, I think I can safely write about how I raise fish and include some salient tips I have acquired from other breeders. Buy the best fish you can find. I use a 2 1/2 gallon or five gallon tank for breeders. I find that if the tanks are much larger, males with well developed caudal fins will not be able to corner the females. I have seen other breeders use one gallon drum bowls for housing breeders. This is fine with adequate water changes. I use one male with two or three females for breeding. I rarely have fertility problems due to my feeding schedule and continual line breeding and out crossing. If I do need to get fry from a particular line that is having fertility problems, I will take a drop from a female raised with twenty to thirty males or set up breeders in a five gallon tank with three males and two females. Ideally I like to move the gravid females to a five gallon tank to spawn. I will usually raise the fry in the five gallon tank until three to four weeks of age. Occasionally, due to lack of space, I will put two females bred to the same male in the same five or maybe ten gallon tank. I never raise fry together that are born more than three days apart as the older fish will severely inhibit the development of the younger fish. This was something I picked up from Stan Shubie approximately five years ago.

I firmly believe the best way to breed top quality show fish is to breed one male to as many females as you possible can to increase your chance of duplicating or improving on the best of your line. Breeding two or three males to a group of females will yield a lot of fry but will slow down the rate at which your fish improve and will not allow you to learn as much about the genetics of your particular line. Mike Lastella is the only breeder to win Grand Male five times and he is adamant about this principal.

At three to four weeks of age I retain the eight largest females in the five gallon tank and put twenty to thirty of the largest males in a fifteen to twenty gallon tank. I put three to four females in with the males for two reasons. If something happens to my virgin females, I will still have some females to get fry from. Secondly, if males are raised in a tank completely devoid of female companionship, at four to five months of age they will no longer chase females, they will only chase other males. ■

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Choosing the Right Female from page 1

(Many times I keep the female long enough to look at or/and I will write the description of the tank of babies from that female). I know that many articles say cull, but for this purpose you must keep all the babies until they are three to four months old. Once you better understand your strain, culling is the correct thing to do. By raising all of your guppies you can take a realistic evaluation of your brood of guppies. Look at your males first and take note of what percentage of them are considered show quality guppies. The percentage you observe will give the approximate odds for choosing the right females, if chosen by random. If your strain has 25% good males, your odds are probably one in four to choose the right female to breed.

So how can we reduce the odds in choosing the right female? Let's take tail shape to explain how to do this. If you observe 20% of your males show short bottom rays in their tails that looks like someone almost cut the corner off. You may also observe that about 20% of your females show the same shape cut on the lower rays. I have observed this in some of the strains I have raised and proved this to be the problem. You probably do not want to use them, but the rest of the females show round tails, delta tails and shark tails (elongate toward the top of tail like a shark, the lower rays are shorter but does not have an abrupt decrease). Now which one? The solution is to pick a female with each type of tail shape and breed them to males (I prefer only one male that best represents the best features with the desired tail shape. Keep each brood separate from each female, raise the babies and take note which female produced the best and highest percentage of good shape tails in the male guppies. You will now know what tail shape to choose for that strain. It is also important to note that angle of the female's tail will affect the angle of the male guppy born from that female.

This may seem impossible if you combine all of the features but usually you do not have to. Your strain may show an extremely low percentage in only two or three features you would like to improve the percentage on. Usually it is tail shape, tail color, dorsal color match and body size. Below is an example chart of things to observe.

More features can be added or taken away from this chart in your observation to choose females. If your strain shows too many bad features and shows a very low percentage of show quality males, it may be best to find a more consistent strain to cross to to improve your strain of guppy. ■

FEATURE	WHAT TO LOOK FOR
Body Size	Overall size, body shape
Tail Color	Tail color, solid or variegated, missing color on portion of tail
Tail Shape	Delta, irregular, round, shark
Tail Size	Tail size (Large tail in female will not guarantee large tail in male)
Tail Angle	Angle of tail (i.e. sixty degrees, forty-five degrees etc.)
Dorsal Color	Dorsal color, dorsal solid or variegated
Dorsal Size	Dorsal shape, dorsal size

MAKING A BREEDING CALENDAR

By Elaine Poy

Breeding to win is challenging. The amount of winning you do in IFGA sanctioned shows depends on many things: your ability to select breeders, choose entries, the number of fish you can raise, the competition level of your class(es), and your ambition. Being ambitious means that you want your fish to be competing at every show of the season so you can earn points towards a first place finish in your color class(es). This takes a little bit of planning

You need to know how long it takes for your fish to reach show size. Such a fish has at least a 7/8" long body to be competitive and should be well on its way to having a 1:1 ratio between body length and caudal length. For this article, I'll say that the fish in question take six months to reach show size.
Then you have to consider how many shows the fish can endure. That could be two to four shows. Using the 1994-95 show schedule as an example, if the fish burn out after three shows, that means fresh show stock in July and September. Breeders sometimes forget to look ahead for the second half, which starts in April. Any entries at the San Fernando Guppy Club show had to have been born at least six months prior (in October) to be show size. Always look ahead. Even though you are still pampering show fish, you have to remember to set up breeders by early August to guarantee October fry. I usually breed my fish at four to six months of age, so I plan for that, too. I suggest writing all show dates in your calendar as well as any breeding notes because it's easy to forget important dates during the show season.

July 1, 1993	Set up breeders
Aug/Sept 1993	Take fry (So you have breeders in Dec.)
Dec. 1993	Set up breeders
Jan. 1994	Take fry (ready in July for ECGA show)
March 1994	Take fry (ready for GAIC show)
July 1, 1994	Set up breeders
July 16, 1994	ECGA show
Aug/Sept 1994	Take fry
Aug 6, 1994	PPGA show
Aug 27, 1994	New England Fancy Guppy Assoc. show
Sept. 17, 1994	GAIC show
Oct. 1994	Take try (ready in April)
Nov. 4, 1994	Guppy Assoc. of Milwaukee show
Dec. 1994	Set up breeders
Jan. 1995	Take fry
March 1995	Take try
April 1, 1995	SPV Guppy Club show
April 22, 1995	Heartland Guppy Club show
May 20, 1995	Michigan Guppy Breeders show
June 24, 1995	ECGA show
etc.	

Notice how the key months don't differ from year to year. If you remember to set up breeders in August and December, you will be ahead of the competition because you will have fish for every show. Modify this calendar to suit your needs. You can opt not to save fry in March by setting up several trios or a large breeding group in December to produce a large number of fry in January. This should yield a large number of show fish by the start of the season. If only a portion of all show sized fish are shown at first, you will have replacements available as needed. Good luck ■

Please direct all questions regarding this publication or bound issues of Volumes I and II or any other pertinent information regarding the club to Elaine Poy, Secretary or Michael Grabowski, Treasurer at 3106 E. Yorba Linda Blvd., #B15, Fullerton, CA 92631 (714) 528-3275.

Brine Shrimp from page 3

In between hatches, the jug was thoroughly rinsed with fresh water, as was the tube through which the shrimp and brine are drained. Frequently the system would also be bleached to prevent any possible spreading of harmful bacteria to the fish.

This setup worked for awhile, at least until the summer when it started to get rather hot. Elaine lives in Orange County, in a third floor apartment. During a typical hot summer day, the apartment can reach a temperature of 95 degrees. This heat stays in the apartment long after it has cooled down outside. You can imagine what that does to the brine shrimp. They get cooked at a much faster rate. The quality of the hatch quickly went down. Suddenly, brine shrimp that used to be quite healthy meals for the guppies after 24 hours of bubbling were dead before they could be fed. There also didn't seem to be as much of the shrimp hatching as before. Double trouble!

Knowing that she was using up 75 cents worth of brine shrimp each day whether or not she got to feed it to her gups, and aware that she did not have time or shrimp to waste on numerous experiments until she got it right, she got some advice from a fellow breeder. He recommended using a whole cup of salt, not just the 4 tablespoons or half cup she had been using, and feeding the shrimp to the fish around 18 hours after set up. The first day she tried this, setting up in the evening and feeding the next afternoon, she got a good hatch. She made another set up right after feeding and got a fair hatch the next morning. The next 18 hour hatch wasn't as good as the previous two. The shrimp weren't quite ready after 18 hours, so we waited 4 more, only to see that the shrimp had died in the meantime. So while she knew there was something to the 18 hour schedule, something else was needed to get it right.

Finally, she made two more changes in her hatching recipe. Instead of using 4 tablespoons of eggs each day, she tried 3. (Sometimes reducing the amount of eggs in the hatch can increase the overall yield.) And instead of setting up a fresh hatch at any old time of day, she decided to try setting up in the early afternoon consistently, around 1 PM. It seems that this is the best time to set up, taking advantage of the heat coming into the apartment at that time, and feeding the next morning just as the cooler indoor temperature finally brings down the hatchery's temperature. So far this seems to be working very well. The hatches have finally become somewhat consistent in quality, and the quality seems to be "great", according to Elaine. The fish are getting fed well again, and there are again leftover shrimp for freezing.

This is one possible solution to the quest for a better hatch. Obviously, you may not have as large a hatchery for eggs, or may not need to hatch as many, but you may want to take heed of some of the strategies Elaine uses to get a better yield of brine shrimp per hatch. If it's hot where you live, you probably don't need to wait 24 hours for the hatch to be ready, but try to set up your next hatch at the same time each day to match the diurnal pattern of heat entering and leaving your house. Use plenty of salt if you are hatching a lot of shrimp - they're brine shrimp, they like that. And if you come up with a different system that works for you, write about it and publish it here! By sharing your successes, failures, and ideas, everyone can benefit as we try to raise some truly fine fancy guppies.

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